

# ORTHOPTEROIDEA OF CRETE

by

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With 13 text-figures and ten plates

## ABSTRACT

Previous records and 3300 newly collected specimens formed the basis of this survey of the Orthopteroidea (= Orthoptera-Saltatoria) of Crete. The following new taxa, all from Crete, are described: *Platycleis (P.) grisea cretica*, *Eupholidoptera forcipata*, *E. latens*, *E. pallipes* and *E. gemellata*. The following species are new to the fauna of Crete: *Phaneroptera n. nana* Fieber, *Homorocoryphus n. nitidulus* (Scopoli), *Sepiana sepium* (Yersin), *Heteracris l. littoralis* (Rambur) and *Tropidopola longicornis* (Fieber) (ssp.n.?). The occurrence of *Platycleis (P.) escalerae* I. Bolívar could be confirmed. However, previous records of *Acrometopa servillei* (Brullé), *Eupholidoptera chabrieri* (Charpentier), *Troglophilus cavicola* (Kollar), *Omocestus petraeus* (Brisout), and *Oedipoda miniata* (Pallas) are considered unreliable. In all, at least 63 species are listed. The typically insular fauna of Crete is closely related to the fauna of the Cyclades and the southern Sporades, while the relationship between Crete and Anatolia appears to be closer than that between Crete and the Greek mainland. Besides, there exists an affinity to the Sicilian fauna, although apparently less close than to the fauna of the eastern part of the Mediterranean Region.

## CONTENTS

Introduction . . . . .	123
List of species found on Crete . . . . .	124
Systematic part . . . . .	125
Tettigonioidea . . . . .	125
Grylloidea . . . . .	138
Gryllotalpoidea . . . . .	141
Tetrigoidea . . . . .	141
Acridomorphoidea . . . . .	142
Conclusions . . . . .	153
List of localities . . . . .	155
References . . . . .	163

## INTRODUCTION

The latest survey of the Orthopteroidea of Crete was given by Ramme (1927). The present authors, together with their families, collected new material (3300 specimens), from 44 localities, which served as a basis for the present critical study. About half of this material has been deposited in the Instituut voor Taxonomische Zoölogie, University of Amsterdam, while the other half, including the

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types of the new taxa, is preserved in the collection of the senior author.

References given under the species names usually concern records of original material. As to the localities of the species, the reader is referred to the map (Fig. 13). Each locality or group of adjacent localities has been given a number, which refers to the "List of Localities", p. 155. The list contains the data on the localities visited recently as well as those of previous records, as far as traceable.

The classification of the higher taxa of the Acridomorphoidea in the present paper is that of Dirsh (1975).

The collecting of additional material from another 13 localities by the following persons is gratefully acknowledged here: A. C. & W. N. Ellis, Amsterdam; W. H. Gravestein, Amsterdam; J. A. W. Lucas, Rotterdam; S. J. van Ooststroom; Oegstgeest; J. H. Woudstra, Zaandam; valuable information was provided by A. Kaltenbach, Vienna and D. K. McE. Kevan, Quebec.

#### LIST OF SPECIES FOUND ON CRETE

<i>Phaneroptera n. nana</i> Fieber	<i>T. roeweri</i> Werner
<i>Tylopsis lilifolia</i> (Fabricius)	<i>Gryllus bimaculatus</i> De Geer
<i>Acrometopa cretensis</i> Ramme	<i>Acheta domesticus</i> (Linné)
<i>Poecilimon cretensis</i> Werner	<i>Tartarogryllus bordigalensis</i> (Latreille)
<i>Conocephalus (Xiphidion) discolor</i> Thunberg	<i>Modicogryllus geticus</i> Vasiliu (?)
<i>Homorocoryphus n. nitidulus</i> (Scopoli)	<i>Gryllomorpha dalmatina</i> (Ocskay)
<i>Tettigonia viridissima</i> (Linné)	<i>G. cretensis</i> Ramme
<i>Decticus albifrons</i> (Fabricius)	<i>Discotilla lindbergi</i> Chopard
<i>Platycleis (P.) grisea cretica</i> subsp. nov.	<i>Arachnocephalus vestitus</i> Costa
<i>P. (P.) intermedia</i> (Serville)	<i>Myrmecophilus (Myrmophilina) ochra-</i> <i>ceus</i> Fischer
<i>P. (P.) affinis</i> Fieber	<i>Trigonidium cicindeloides</i> Rambur
<i>P. (P.) escalerae</i> I. Bolívar	<i>Oecanthus pellucens</i> (Scopoli)
<i>P. (Incertana) incerta</i> Brunner v.W.	<i>Gryllotalpa gryllotalpa</i> (Linné)
<i>Sepiana sepium</i> (Yersin)	<i>Tetrix depressa</i> (Brisout)
<i>Eupholioptera astyla</i> (Ramme)	<i>Paratettix meridionalis</i> (Rambur)
<i>E. cretica</i> Ramme	<i>Paranocarodes sieberi</i> (Brunner v.W.) (?)
<i>E. forcipata</i> spec. nov.	<i>Orchamus raulinii</i> (Lucas)
<i>E. latens</i> spec. nov.	<i>O. y. yersini</i> (Brunner v.W.) (?)
<i>E. pallipes</i> spec. nov.	<i>Pyrgomorpha c. conica</i> (Olivier)
<i>E. gemellata</i> spec. nov.	<i>Tropidopola longicornis</i> (Fieber) (sub- spec. nov.?)
<i>Rhacocleis germanica</i> (Herrich Schaefer)	<i>Calliptamus italicus</i> (Linné)
<i>Uromenus (Bolivarius) elegans</i> (Fischer)	<i>C. b. barbarus</i> (Costa)
<i>Dolichopoda paraskevi</i> Boudou-Saltet	<i>Heteracris l. littoralis</i> (Rambur)
<i>D. spec.</i> Boudou-Saltet	<i>Pezotettix giornae</i> (Rossi)
<i>Troglophilus spinulosus</i> Chopard	<i>Anacridium aegyptium</i> (Linné)
	<i>Ochrilidia pruinosa</i> Brunner v.W.
	<i>O. tibialis</i> (Fieber) (?)

<i>Dociostaurus maroccanus</i> (Thunberg)	<i>A. t. thalassinus</i> (Fabricius)
<i>Chorthippus (Glyptobothrus) b. brunneus</i> (Thunberg)	<i>Acrotylus l. longipes</i> (Charpentier)
<i>C. (G.) biroi</i> (Kuthy)	<i>A. patruelis</i> (Herrick Schaeffer)
<i>Truxalis nasuta</i> (Linné)	<i>A. insubricus inficitus</i> (Walker)
<i>Locusta migratoria</i> Linné	<i>Oedipoda caerulescens</i> (Linné)
<i>Oedaleus decorus</i> (Germar)	<i>O. venusta</i> Fieber
<i>Aiolopus strepens</i> (Latreille)	<i>Sphingonotus</i> spec.
	<i>Acrida turrita</i> (Linné) (?)

## SYSTEMATIC PART

Tettigonioidea  
Tettigoniidae  
Phaneropterinae

***Phaneroptera nana nana* Fieber, 1853**

Localities. N. Réthimnis: 49 (1 ♀).

Distribution. *P. nana* is distributed throughout the Mediterranean Region, western Arabia, Africa and Madagascar. The range of the nominate subspecies covers the northern part of this area, coinciding almost exactly with the Mediterranean type of vegetation and Mediterranean crops.

Discussion. Recently *P. nana sparsa* Stål has been found in Spain (Ragge, 1965). It should be noted here that the comparative length of the fore wing and hind femur of our specimen agrees with the nominate subspecies and not with *sparsa*.

Up to now not recorded from Crete.

***Tylopsis liliifolia* (Fabricius, 1793)**

*Tylopsis liliifolia*: Werner, 1903: 68; Kuthy, 1907: 553; Werner, 1927: 428; Ramme, 1927: 188.

Localities. N. Chaníou: 9 (1 ♀); 15e (1 ♂); 16 (1 ♂ 1 ♀); 17b (Werner, 1927), c (1 ♂ 1 ♀); 20 (1 ♂); 22b (Kuthy, 1907); 31 (2 ♂ 2 ♀); N. Réthimnis: 40 (1 ♂ 1 ♀); 41 (1 ♂ 1 ♀); 46 (Kuthy, 1907); 49 (2 ♀); 50b (1 ♀); 56 (3 ♀); N. Iráklion: 61 (2 ♂ 1 ♀); 63 (2 ♂ 1 ♀); 65 (2 ♂); 69 (1 ♂); 71a (2 ♀), d (3 ♂ 3 ♀); 74 (1 ♂); 83a (Werner, 1903); 97a (1 ♀); N. Lassithíou: 107b (1 ♂); 116 (2 ♂); 118 (Ramme, 1927); 122e (1 ♀).

Distribution. The range of this species covers most of the Mediterranean Region.

***Acrometopa cretensis* Ramme, 1927**

*Acrometopa macropoda*: Kuthy, 1907: 553 (misidentification).

*Acrometopa servillea*: Werner, 1927: 428 (misidentification ?).

*Acrometopa cretensis* Ramme, 1927: 122, Fig. 5e-8e, Pl. f. 5b-c.

Localities. N. Chaníou: 6a (Ramme, 1927); 13 (1 ♀); 19 (Werner, 1927) ?; N. Réthimnis: 46 (Kuthy, 1907; Ramme, 1927); N. Irákliou: 71a (1 ♀); 97a (1 ♂); N. Lassithíou: 118 (Ramme, 1927); 120 (Ramme, 1927).

Distribution. This species is known from Crete and some islands of the Cyclades: Kímolis, Polívos, Íos, Antíparos, Kýthnos and Kéa (Werner, 1934, 1937).

Discussion. *A. servillea* has been recorded only once from Crete (Werner, 1927, referring to a juvenile male). Most probably the specimen belongs to *cretensis*, which was described shortly after Werner's paper had been published. For the time being, we remove *servillea* from the faunistic list of Crete.

### **Poecilimon cretensis Werner, 1903**

*Poecilimon jonicus cretensis* Werner, 1903: 67, Fig.

*Poecilimon distinguendus* Kuthy, 1907: 554.

*Poecilimon cretensis*: Ramme, 1927: 186; Harz, 1969: 137, Fig. 292—293, 323, 418—419.

Localities. N. Chaníou: 1 (1 ♂); 13 (2 ♂); 22d (1 ♂); N. Réthimnis: 38a (Werner, 1903); 52b (Kuthy, 1907); 53 (93 ♂ 43 ♀); 54a (Kuthy, 1907), b (Ramme, 1927); N. Irákliou: 71a (31 ♂ 24 ♀); 78 (Ramme, 1927); 83b (3 ♂ 4 ♀); 86c (Kuthy, 1907); 91 (Kuthy, 1907); 93 (Ramme, 1927); N. Lassithíou: 107a (Ramme, 1927); 118 (Ramme, 1927); 127 (Harz, 1969); 128 (Ramme, 1927).

Distribution. Known only from Crete and one island of the Cyclades: Náxos (Ramme, 1927).

Discussion. This species occurs from the lowlands up to above the timberline (2200 m, 52b). Specimens from above the present-day timberline show extensive black pigmentation.

### **Conocephalinae**

#### **Conocephalus (Xiphidion) discolor Thunberg, 1815**

*Niphidium* [sic] *fuscum*: Kuthy, 1907: 553.

Localities. N. Chaníou: 22b (Kuthy, 1907); N. Irákliou: 71b (1 ♀), d (10 ♂ 13 ♀ 2 juv.).

Distribution. This species is found in the British Isles and throughout Europe, extending into Palaearctic Asia and N. Africa.

#### **Homorocoryphus nitidulus nitidulus (Scopoli, 1786)**

Localities. N. Réthimnis: 41 (1 juv.).

Distribution. This species is widely spread throughout the southern part of Europe, in subtropic and tropical Africa, and in Palaearctic Asia.

Discussion. Up to now not recorded from Crete.

## Tettigoniinae

**Tettigonia viridissima** (Linné, 1758)

*Tettigonia viridissima*: Werner, 1927: 428; Ramme, 1927: 188.

Localities. N. Chaníou: 1 (1 juv.); 15e (4 ♂ 2 ♀); 26b (Werner, 1927); N. Iráklion: 71a (1 ♂ observed); 78 (Ramme, 1927); N. Lassithíou: 121 (Ramme, 1927).

Distribution. This species occurs in most of the Palaearctic Region.

## Decticinae

**Decticus albifrons** (Fabricius, 1775)

*Decticus (Locusta) albifrons*: Lucas, 1854: 167.

*Decticus albifrons*: Werner, 1903: 68; Ramme, 1927: 188.

Localities. N. Chaníou: 10 (Lucas, 1854); N. Réthimnis: 38a (Werner, 1903); 40 (1 ♀); 49 (4 ♂ ♂ ♀); 50b (1 ♂); N. Iráklion: 71d (1 ♂ 1 ♀); 86a (Lucas, 1854); N. Lassithíou: 111b (Ramme, 1927); 112 (Ramme, 1927).

Distribution. The range of this species covers the Mediterranean Region and extends into southwestern Asia.

**Platycleis (Platycleis) grisea cretica** subsp. nov.

(Pl. 1 Fig. 2, Pl. 2 Fig. 5)

The material from Crete was compared with over 300 specimens of the *grisea*-complex, originating from more than 50 localities (lowland up to 2200 m) and representing nominate *grisea* (Fabricius), *grisea transiens* Zeuner, including topotypes of the latter, and *grisea monticola* Chopard. Special attention was given to specimens from the high mountains of Greece.

The *grisea* material, except for that from Crete, is characterized as follows: elytron more than three times as long as pronotum (from 3.2 to 5.1 times), even if elytron does not reach hind knee completely; Rs vein (nomenclature as proposed by Ragge, 1955) distinctly separated from MA and with some accessory posterior branches; exceptionally, Rs fused with MA for a short distance, but then these veins distinctly diverging again apically; elytron strongly elongate, anterior and posterior margins roughly parallel, apex widely rounded; hind wing hardly shorter than elytron, MA with a number of accessory posterior branches; hind femur invariably slender, distinctly attenuate apically.

As to the characters of the tegmina and the hind femur, it is apparent that the material from Crete (Pl. 1 Fig. 2, Pl. 2 Fig. 5) and that from Greece (Pl. 1 Fig. 1, Pl. 2 Fig. 4) is different (compare a study on *Platycleis (Tessellana)* by Kaltenbach, 1964). However, the abdominal terminalia and the superficially studied stridulatory apparatus appear to be similar. We consider the population of Crete to belong to the *grisea*-complex but to represent a distinct subspecies.

Material studied: ♂ holo-, ♀ allo-, 5 ♂ 9 ♀ paratypes, labelled: Hellas, Kriti, Ídi Oros, Kolita-Psiloritis 1700-2100 m, 28-29. vii. 1973; additional paratypes: Lefka Ori, Linoseli above Xiloskalo 1800-1900 m, 5. viii. (1 ♀) & Omalos 1000 m, 4. viii. (1 ♂ 2 ♀) 1973, all F. Willemse c.s.

### Description.

♂, ♀ (Pl. 1 Fig. 2, Pl. 2 Fig. 5). Within the *grisea*-complex distinct by shorter tegmina and hind femur. Elytron not or slightly extending beyond tip of abdomen, by far not reaching hind knee, not more than 2-3 times as long as pronotum; basally, including the stridulatory apparatus in the male, as wide as usual; apically strongly narrowing towards narrowly rounded or subacute apex; R vein divided into R<sub>1</sub> and R<sub>s</sub>, bifurcation located as usual; R<sub>s</sub> after a short distance completely fused with MA (in 18 specimens) or nearly touching MA (in 2 specimens); elimination of the area between R<sub>s</sub> and MA, together with shortening of the longitudinal veins and reduction of the areas posteriorly of R, results in brachyptery. Hind wing short, only slightly longer than half the elytron; MA without accessory branches, area between MA and MP strongly reduced. Hind femur comparatively short, slightly attenuate apically. Male cercus of usual shape, slightly shorter than in nominate *grisea*. Epiphallus as in *grisea*-complex. Female abdominal terminalia about as in *grisea transiens*, hind margin of last abdominal sternite more or less elevated in the middle. Coloration as usual.

Measurements (length in mm). Ídi Óros (6 ♂ 10 ♀): body ♂ 17.0-18.1, ♀ 17.3-19.0; pronotum ♂ 5.1-5.9, ♀ 5.2-5.6; elytron ♂ 10.6-12.7, ♀ 10.3-12.8; hind femur ♂ 14.8-15.1, ♀ 13.9-15.4; ovipositor 9.9-10.8; Linoséli (1 ♀): body 17.1; pronotum 5.6; elytron 13.1; hind femur 15.8; ovipositor 10.3; Omalós (1 ♂ 2 ♀): body ♂ 17.2, ♀ 17.6-17.9; pronotum ♂ 5.0, ♀ 5.2-5.5; elytron ♂ 14.2, ♀ 14.8-15.0; hind femur ♂ 15.1, ♀ 16.1-16.9; ovipositor 10.1-10.2.

Localities. N. Chaníou: 13; 15e; N. Réthimnis: 53.

Distribution. Known only from the western and central mountains of Crete.

Discussion. The available material is uniform as to its general appearance. The tegmina and the hind femora of the few specimens from Omalós are slightly longer (1-3 mm) than those of the specimens from above the timberline, which differences may be connected with differences in altitude. The venation and the shape of the tegmina are uniform, except for the course of R<sub>s</sub> in both elytra of the male from Omalós and in the right elytron of the female from Linoséli. In these elytra R<sub>s</sub> and MA are separate, although very close, almost touching each other.

Galvagni (1959) described an other short-winged form in *Platycleis* (*Platycleis*), viz., *P. (P.) concii*. This species occurs in the Madonie mountains of Sicily, from 1000 up to 1800 m altitude. Comparison of *concii* (Pl. 1 Fig. 3, Pl. 2 Fig. 6) with *grisea cretica* reveals the shape and venation of the tegmina to be nearly the same. However, the long and attenuate hind femur, the more robust general appearance with wider head and thorax and the larger measurements in the former are quite distinct.

Previous records of *grisea* from Crete are doubtful: Griffini (1894: 92) records a single male from Láki (17a) and Ramme (1927: 188) a single male from Ierápetra (111b). Both records probably refer to *intermedia*. Distinction between the males

of *grisea* and *intermedia* was hardly possible in the time of Griffini's paper, nor in that of Ramme's. Reliable records of *intermedia* (based on the female) from the two localities are now available: from Ierápetra by Ramme himself (1951), and from Láki in the present material. We assume that the only representative of the *grisea*-complex in Crete is *grisea cretica*.

Details of the localities and the habitat of *grisea cretica* are discussed below under *Eupholidoptera forcipata* and *pallipes*. Flight was not observed.

### **Platycleis (Platycleis) *intermedia* (Serville, 1839)**

*Platycleis grisea*: Griffini, 1894: 92 (misidentification ?); Ramme, 1927: 188 (idem).

*Platycleis intermedia*: Kuthy, 1907: 553; Ramme, 1951: 245, 247.

Localities. N. Chaníou: 15b (Kuthy, 1907); 16 (2 ♂); 17a (Griffini, 1894) ?, c (2 ♀); 31 (6 ♂ 3 ♀); N. Réthimnis: 40 (2 ♀); 46 (Kuthy, 1907); 48 (4 ♂ 3 ♀); 49 (1 ♂ 4 ♀); 50b (1 ♂ 5 ♀); 55 (1 ♂); N. Irákliou: 61 (1 ♀); 71a (2 ♂); 90c (1 ♂ 1 ♀); 91 (Kuthy, 1907); 97a-b (11 ♂ 1 ♀); N. Lassithíou: 108 (1 ♂); 109 (1 ♀); 111a (Ramme, 1951), b (Ramme, 1927) ?; 119 (2 ♀); 122d (1 ♀).

Distribution. The range of this species covers S. Europe and N. Africa, and extends far into Palaearctic Asia.

Discussion. Previous records of *grisea* by Griffini and Ramme which are here referred to *intermedia*, are discussed under *grisea cretica*. It should be noted here that the specimens of *intermedia* from Crete usually are smaller than those from the mainland of Europe, and thus resemble *grisea* (especially the male).

### **Platycleis (Platycleis) *affinis* Fieber, 1853**

*Platycleis affinis*: Werner, 1903: 68.

Localities. N. Réthimnis: 40 (1 ♀); 50b (2 ♂ 5 ♀); N. Irákliou: 86b (Werner, 1903).

Distribution. This species occurs in central, but mainly in southern Europe, extending into northern Africa and far into western Asia.

### **Platycleis (Platycleis) *escalerae* I. Bolívar, 1899**

*Platycleis escalerae* (?): Ramme, 1927: 143, 188.

Localities. N. Irákliou: 61 (2 ♂ 2 ♀); 71d (1 ♀); N. Lassithíou: 111b (Ramme, 1927).

Distribution. This species is distributed throughout southeastern Europe and the adjacent part of western Asia.

Discussion. While Ramme was not certain of his identification of a single male from Ierápetra, the present material is proof of the occurrence of this species in Crete.

### **Platycleis (Incertana) *incerta* Brunner von Wattenwyl, 1882**

*Incertana incerta*: Zeuner, 1941: 37, Fig. 31.

Localities. Crete (Zeuner, 1941); N. Chaníou: 15e (1 ♂ 3 ♀); 16 (1 ♂); 31 (2 ♂); N. Réthimnis: 40 (1 ♂ 1 ♀); 41 (9 ♂ 2 ♀); 48 (1 ♂ 1 ♀); 49 (2 ♂); 50b (3 ♂ 2 ♀); 56 (2 ♀); N. Irákliou: 57 (4 ♂); 61 (1 ♀); 63 (1 ♂); 71d (18 ♂ 24 ♀).

Distribution. Known from the Balkan peninsula, Crete, some Aegean islands and Turkey.

### **Sepiana sepium** (Yersin, 1854)

Localities. N. Réthimnis: 40 (1 ♀); 50b (1 ♂ 1 ♀); N. Irákliou: 71d (2 ♂ 2 ♀).

Distribution. The range of this species covers southern Europe, including some Mediterranean islands, and extends into Turkey.

Discussion. Up to now not recorded from Crete.

### **Eupholidoptera** Ramme, 1951

Up to now, two species of *Eupholidoptera* were known from Crete. In the present material another four, apparently new, species are recognized. The following descriptions of the new species were made after comparison with the type-species, *E. chabrieri* (Charpentier).

#### Key to the males of the *Eupholidoptera* species from Crete

1. Cercus and subgenital plate with teeth . . . . . 2
- Cercus and subgenital plate without teeth . . . . . 3
2. Tip of epiphallus with a lateral spine on each side (Pl. 7 Fig. 35—36) . . . . . *pallipes* spec. nov.
- Tip of epiphallus laterally rounded and without spines (Pl. 7 Fig. 37—38) . . . . . *gemellata* spec. nov.
3. Stylus of subgenital plate long, about as long as cercus (Fig. 7); epiphallus symmetrical, apical parts close together, partly fused (Fig. 9) *cretica* Ramme
- Stylus of subgenital plate short, shorter than half length of cercus; epiphallus asymmetrical, or if symmetrical, then with apical parts divergent . . . . . 4
4. Median excision of hind margin of subgenital plate very wide and deep and more than half the length of the plate (Pl. 5 Fig. 21); epiphallus symmetrical, large, robust, apical parts divergent (Pl. 6 Fig. 29—31) . . . *forcipata* spec. nov.
- Median excision less wide and deep . . . . . 5
5. Hind margin of last abdominal tergite with a narrow median excision (Fig. 1); epiphallus asymmetrical, apical parts partly fused (Fig. 4) . . . *astyla* (Ramme)
- Hind margin with a wider median excision (Pl. 5 Fig. 19); epiphallus symmetrical, apical parts divergent (Pl. 7 Fig. 32—34) . . . . . *latens* spec. nov.

A key to the females of *Eupholidoptera* from Crete is not given. Distinctive characters are apparent only in *forcipata*, while the females of *cretica* and *gemellata* are unknown.

Kuthy (1907: 553) recorded *Thamnotrizon chabrieri* from Amari (46). Ramme (1927: 194) briefly discussed this record, but Kuthy's material could not be traced.

As to the range of this species, its occurrence in Crete is not probable and confirmation is needed. For the time being, the species is omitted from the faunal list of Crete.

**Eupholidoptera astyla** (Ramme, 1927)  
(Fig. 1—5)

*Pholidoptera astyla* Ramme, 1927: 133, 196, 198, Fig. 11d, 13—14; Ramme, 1930: 799, 821, Fig. 5—7, 9; Ramme, 1939: 94—96, 100, Fig. 27.

*Eupholidoptera astyla*: Ramme, 1951: 198, 203, 206, 209, 211, Fig. 51; Harz, 1969: 362, 377, Fig. 1109, 1130, 1159—1161.

Localities. N. Lassithíou: 107a; 111b; 112 (all Ramme, 1927).

Distribution. This species is known only from the original material: a male from Náxos (the Cyclades), and three females and the tip of a male abdomen from eastern Crete. The male from Náxos has been selected as lectotype. Therefore Náxos is the type-locality and not Crete, as indicated by Harz (1969).

**Eupholidoptera cretica** Ramme, 1951  
(Fig. 6—9)

*Eupholidoptera cretica* Ramme, 1951: 198, 202, 203, 211, Fig. 47, 51; Harz, 1969: 362, 377, Fig. 1111—1112.

Localities. N. Chaníou (12b) (Ramme, 1951).

Distribution. The species is known only from the male holotype. As far as could be traced, Sanmaria, in the original description, was a misspelling of Samariá.

**Eupholidoptera forcipata** spec. nov.

(Pl. 2 Fig. 7—8, Pl. 4 Fig. 14, Pl. 5 Fig. 18, 21, Pl. 6 Fig. 25, 29—31, Pl. 8 Fig. 39)

Material studied: ♂ holotype, ♀ allotype, 45 ♂ and 59 ♀ paratypes, labelled: Hellas, Kriti, Idi Oros, Kolita-Psiloritis 1700-2100 m, 28-29.vii.1973, F. Willemse c.s.

Description.

♂ (Pl. 2 Fig. 7). Robust. Pronotum wide, scarcely or not widening posteriorly, metazona comparatively short, hind margin slightly convex. Legs short and thick.

Last abdominal tergite (Pl. 5 Fig. 18) curved strongly downwards; hind margin with a deep and wide median excision, which is transversely concave in the middle and straight at sides; from this excision, at either side, projects a large, triangular lobe with slightly wrinkled surface and strongly toothed apex, which points ventro-laterally.

Cercus (Pl. 6 Fig. 25) without tooth, short, about as long as last abdominal tergite measured in the middle; basal half roughly cylindrical and straight, apical half narrowing at inner side and slightly upcurved, apex obtusely pointed.

Subgenital plate (Pl. 5 Fig. 21) without spines, very large, slightly wider than long and slightly tapering apically, distal half strongly slanting upwards and, in

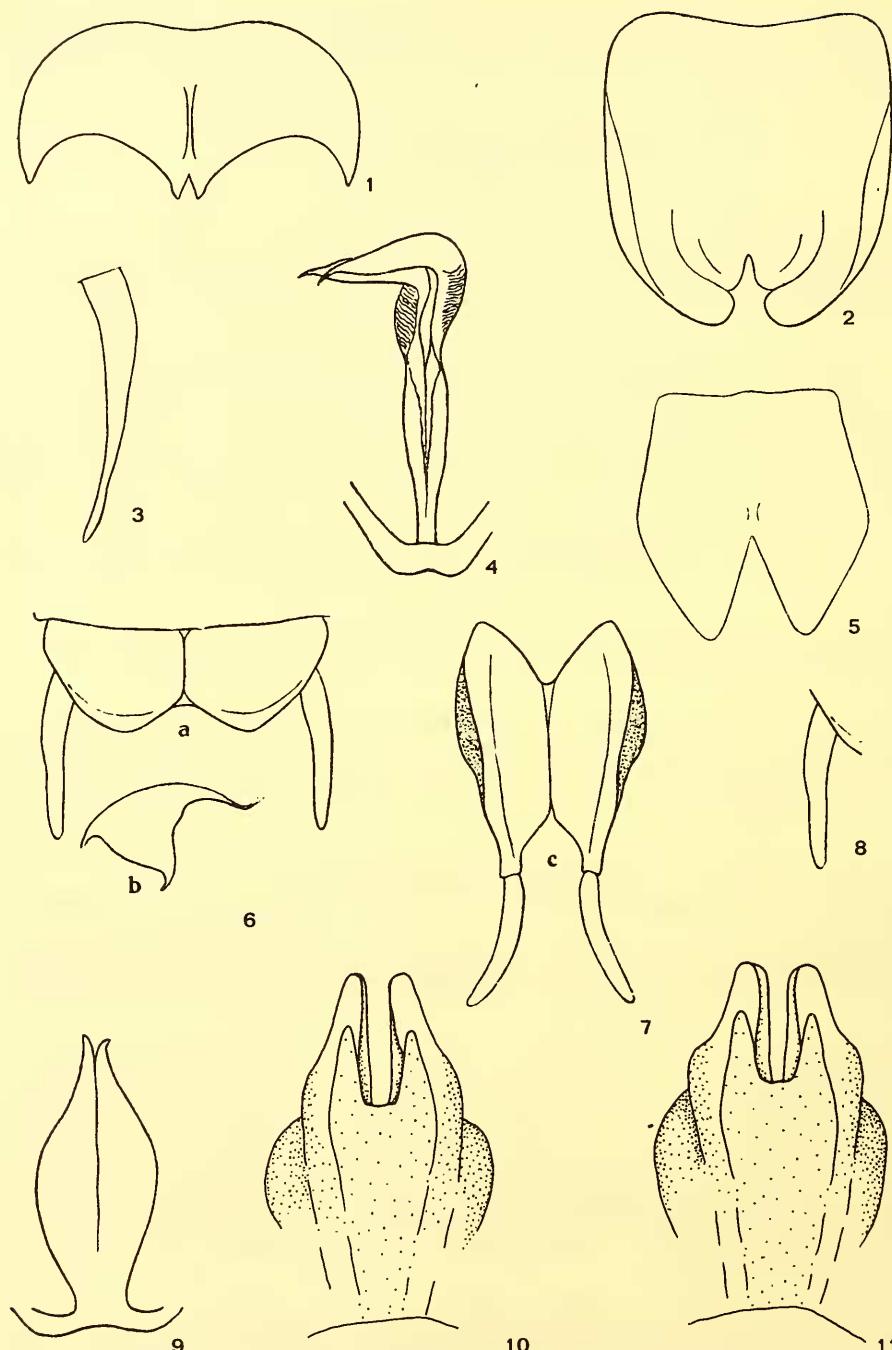


Fig. 1—5. *Eupholidoptera astyla* (Ramme). 1—4, male; 1, last abdominal tergite; 2, subgenital plate; 3, cercus, dorsal view; 4, epiphallus; 5, female, subgenital plate. Fig. 6—9, *E. cretica* Ramme, male. 6, last abdominal tergite; 7, subgenital plate; 8, cercus, dorsal view; 9, epiphallus. (All after Ramme). Fig. 10—11. *Tropidopola longicornis* (Fieber) subsp. nov.?, apex of phallus of two males from Amnissós

closed position, covering distal part of last abdominal tergite; anterior margin with an obtuse-angled excision; posterior margin very wide, with a deep and rectangular excision; lateral parts of plate angularly bent dorsad along a low and smooth lateral ridge from which the stylus arises distally. Stylus short, not exceeding one fourth of cercal length, about two or three times as long as wide.

Epiphallus (Pl. 6 Fig. 29—31) strongly sclerotized, large; apical parts fused and narrow in proximal half, strongly divergent, hook-like and recurved in distal half, extending far over last abdominal tergite.

General colour yellowish brown. Clypeus, frons and genae with several symmetrically arranged black points. Vertex and occiput with a pair of black, medial fasciae, composed of transverse stripes and usually separated from each other by a yellow median line. Above the eye a longitudinal black stripe, behind the eye a similar but wider one. Pronotal dorsum, in middle of prozona, with black markings in varying degree, metazona sometimes with green flush. Pronotal lateral lobe with wide, black, dorsal fascia, in prozona not sharply delimited ventrally, in metazona sharper and strongly narrowing posteriorly. Elytron and last abdominal tergite completely black. First abdominal tergite partly black, other abdominal tergites faintly dotted with dark brown. Abdominal sternites orange brown, subgenital plate orange yellow, the latter with lateral parts black. Cercus dark brown. Fore and middle legs with numerous black points and stripes. Hind femur with a short, longitudinal, black stripe dorso-basally, usually composed of a series of transverse stripes; outer side with a large, roughly triangular or V-shaped black streak near the middle and with more or less numerous blackish or dark brownish transverse stripes. Apical half of hind femur with a short, dorsal, black stripe. Hind knee and postgenicular part of hind tibia black, except dorsally.

♀ (Pl. 2 Fig. 8). Slightly larger than male. Elytron almost completely covered by pronotum. Cercus very slightly curved upwards, short, conical, apex pointed. Abdominal sternites simple. Subgenital plate (Pl. 8 Fig. 39) much wider than long, distal half strongly slanting upward; posterior margin slightly converging towards a deep but narrow median excision, which reaches at least middle of plate and has the angles widely rounded. Ovipositor comparatively short, straight or slightly curved upwards apically. Coloration as in male.

Measurements (length in mm): body ♂ 21.0—24.0, ♀ 18.5—24.0; pronotum ♂ 9.2—10.1, ♀ 9.0—9.2; elytron ♂ 5.4—6.5, ♀ 3.0—4.0; hind femur ♂ 15.4—16.9, ♀ 17.0—17.6; ovipositor 16.0—17.2.

Localities. N. Réthimnis: 53.

Distribution. Known only from Mt. Idi, central Crete.

Discussion. *E. forcipata* is well characterized by its abdominal terminalia and close to *anatolica* (Ramme). In the male of the latter species the posterior margins of the last abdominal tergite and that of the subgenital plate are excised in a much different way, while the stylus is more elongate and the proximal half of the apical parts of the epiphallus is wider.

The type-locality, Kolita-Psiloritis, can be reached by foot from Kamáres (520 m), a village on the southeastern slopes of Mt. Idi. From there a track follows the main water-pipe of the village and leads to several springs. The last and highest of these springs is named Skaroneró (1650 m) and is the type-locality

of *E. gemellata* (see below). At a short distance and after passing the present-day timberline, a small plateau with some shepherd's huts is reached, named Kolita (1750 m). During the night spent up there we experienced considerable night-frost. *E. forcipata* was mainly collected in the surroundings of the huts. It lives rather hidden in low, dense, prickly shrubs, e.g. *Astragalus* spec., and is found together with *Poecilimon cretensis* and *Platycleis grisea cretica*. The collecting was considerably facilitated by the use of firm gloves. At times the sound of *E. forcipata* was heard, during the warmest hours of the day. As in most of *Eupholi-doptera* species, the sound much resembles that of *Ephippiger* species.

***Eupholidoptera latens* spec. nov.**

(Pl. 3 Fig. 9—10, Pl. 4 Fig. 15, Pl. 5 Fig. 19, 22, Pl. 6 Fig. 26, Pl. 7 Fig. 32—34, Pl. 8 Fig. 40)

Material studied: ♂ holotype, ♀ allotype, 2 ♂ 3 ♀ paratypes, labelled: Hellas, Kriti, Lefka Ori, refuge near Koukoule 1600-1800 m, 6.viii.1973; additional paratypes: 1 ♂, Lefka Ori, Linoséli above Xiloskalo, 1800-1900 m, 5.viii.1973, and 1 ♂, Lefka Ori, Omalos, 1000 m, 4.viii.1973, all F. Willemse c.s.

**Description.**

♂ (Pl. 3 Fig. 9). Pronotum with metazona comparatively short, posterior margin slightly convex.

Last abdominal tergite (Pl. 5 Fig. 19) strongly curved downwards; posterior margin with a wide, concave, moderately deep, median excision, which is sharply toothed laterally, the teeth pointing ventrally.

Cercus (Pl. 6 Fig. 26) without tooth, long, about twice as long as last abdominal tergite (measured in the middle), slender; basally almost three times as wide as apically, slightly curved inward; apex obtusely pointed.

Subgenital plate (Pl. 5 Fig. 22) without spines, much longer than wide, strongly tapering distally; distal part slanting upwards, in closed position scarcely covering last abdominal tergite; ventral surface with median keel; lateral margin bent upwards proximally, strongly inflated distally and there forming a smooth, wide range, ridges on either side converging towards apex of plate; apex with narrow, triangular, median excision, which does not reach farther than one-fourth of length of plate. Stylus (Pl. 4 Fig. 15) short and thick, length about one-fifth of cercus, straight, cylindrical, about two or three times as long as wide, inserted pre-apically at ventral surface of subgenital plate and pointing ventrally (i.e. perpendicularly to the subgenital plate).

Epiphallus (Pl. 7 Fig. 32—34) strongly sclerotized, of moderate length, apical parts fused and wide in proximal half, moderately divergent, hook-like and weakly recurved in distal part; the latter extends over last abdominal tergite.

Coloration as in *forcipata*, but black markings, especially those of hind femur, less conspicuous.

♀ (Pl. 3 Fig. 10). Slightly larger than male. Elytron completely covered by pronotum or almost so. Cercus straight, short, conical, apex pointed. Abdominal sternites simple. Subgenital plate (Pl. 8 Fig. 40) about as long as wide; posterior

margin obliquely convergent towards a triangular, median excision, which reaches about one-third of length of plate, its posterior angles narrowly rounded. Ovipositor slightly curved apically. Coloration as in male.

Measurements (length in mm): body ♂ 18.0-23.0, ♀ 17.8-18.2; pronotum ♂ 8.7-9.4, ♀ 8.2-8.5; elytron ♂ 4.5-6.0, ♀ 1.0-2.0; hind femur ♂ 16.0-17.5, ♀ 16.1-16.9; ovipositor 13.5-14.4.

Localities. N. Chanfou: 13; 14; 15e.

Distribution. Known only from the Lefka Range, western Crete.

Discussion. This species is well characterized by the abdominal terminalia of the male, and is easily distinguished from the other species of the genus, with the exception of *astyla*. The peculiar position of the male styli resembles that of *astyla*. The latter species differs from *latens*, in the male sex, in the smaller excision of the posterior margin of the last abdominal tergite (Fig. 1), the more inwards curved cercus (Fig. 3), the less tapering subgenital plate (Fig. 2), and the quite distinct epiphallus (Fig. 4). Distinction of *latens* and *astyla* in the female sex is not obvious. The slight differences in shape of the subgenital plate (Fig. 5, Pl. 8 Fig. 40) cannot be considered reliable, as the variation in both species is insufficiently known.

The type-locality can be reached, by car, from the village and high plateau, both named Omalós (1000 m). Via a rather bad track of about 5 km, a refuge „Kalérji” belonging to the Hellenic Alpine and Ski Federation is reached. It lies close to one of the peaks of the Lefka Range, named Koukoulé. The specimens were sparsely found in the surroundings of the refuge, where they live remarkably hidden in dense shrubs, e.g. *Juniperus*. Catching them appeared to be a rather exhaustive task. The adjacent locality Linoséli is discussed below under *E. pallipes*. *E. latens* also occurs on the slopes bordering the Omalós plateau, where it lives in shrubs of *Quercus coccifera*, and again is very difficult to find. Using its song, which much resembles that of *Ephippiger*, as a guide, only one single male could be caught during twilight.

A single female from Mt. Idi, found above Kamáres (1000 m) on our way to Kolítia (see under *E. forcipata*), much resembles *latens*. However, without the male, we are not certain as to its true identity.

#### *Eupholidoptera pallipes* spec. nov.

(Pl. 3 Fig. 11—12, Pl. 4 Fig. 16, Pl. 5 Fig. 20, 23, Pl. 6 Fig. 27, Pl. 7 Fig. 35—36, Pl. 8 Fig. 41)

Material studied: ♂ holotype, ♀ allotype, 5 ♂ paratypes, labelled: Hellas, Kriti, Lefka Ori, Linoséli above Xiloskalo, 1600—1800 m, 5.viii.1973, F. Willemse c.s.

#### Description.

♂ (Pl. 3 Fig. 11). Eyes prominent. Pronotum not widening posteriorly; lateral edges of dorsum widely rounded; metazona very short, with slightly flattened dorsum and without median keel or almost so; posterior margin slightly convex.

Last abdominal tergite (Pl. 5 Fig. 20) moderately curved downwards; posterior strongly produced apically with a narrow, roughly rectangular or heart-shaped

median excision, which is strongly toothed laterally, teeth pointing towards each other or more to the ventral side.

Cercus (Pl. 6 Fig. 27) of moderate length, about as long as last abdominal tergite; relatively thick, basally twice as wide as apically, slightly curved inwards, with a narrow, inwards curved, inner tooth at short distance from basis; apex of cercus obtusely pointed, apex of tooth sharply spined.

Subgenital plate (Pl. 5 Fig. 23) about as in the type-species; longer than wide, moderately tapering distally, in closed position not covering last abdominal tergite; posterior margin with a moderately deep and narrow, concave, median excision and, at either side, a single spine situated between median excision and insertion of stylus. Stylus as in the type-species, at least half as long as cercus.

Epiphallus (Pl. 7 Fig. 35—36) weakly sclerotized, narrow and long; apical parts completely fused along whole length, slightly recurved, slightly tapering distally but tip widening again and, at either side, with a fine lateral spine; apical parts considerably projecting, reaching level of apex of cerci.

General colour pale yellow brown. Frons above clypeal margin with a pair of large black spots, which may be fused into a single transverse fascia. Vertex of general colour, occiput and area along dorsal margin of eye completely black. Pronotum of general colour, or, usually, with small black spot in central part of metazona of lateral lobe. Elytron and abdomen as in the type-species. Legs unicolorous, hind femur without black markings, hind knee sometimes blackish.

♀ (Pl. 3 Fig. 12). Elytron completely covered by pronotum. Cercus curved slightly inwards, short, conical, apex pointed. Subgenital plate (Pl. 8 Fig. 41) as long as wide, hind margin slightly convergent towards a wide, concave, median excision, which reaches about one-fourth of length of plate, its apical angles widely rounded. Ovipositor slightly curved apically. Coloration as in male.

Measurements (length in mm): body ♂ 18.0-21.0, ♀ 16.0; pronotum ♂ 7.4-7.9, ♀ 7.5; elytron ♂ 3.8-5.0, ♀ 1.5; hind femur ♂ 14.0-15.0, ♀ 16.5; ovipositor 15.0.

Localities. N. Chaníou: 13.

Distribution. Known only from the Lefka Range, western Crete.

Discussion. The species is well characterized by the external abdominal terminalia, which resemble those of the type-species, together with the unique epiphallus of the male and the rounded pronotum and unicolorous legs in both sexes.

The type-locality is accessible by foot from a refuge named Xilóskalo (1200 m), situated at the southernmost point of the Omalós plateau. From here a mountain track in the direction of one of the peaks of the Lefka Range, named Gigilós (2080 m), leads to a spring and saddle both named Liñoséli. The latter is the precise locality of the type-series. The habitat is similar to that of *forcipata*. The song has not been heard.

#### *Eupholidoptera gemellata* spec. nov.

(Pl. 4 Fig. 13, 17, Pl. 5 Fig. 24, Pl. 6 Fig. 28, Pl. 7 Fig. 37—38)

Material studied: ♂ holotype, labelled: Hellas, Kriti, Idi Oros, Kamares-Kolita, Skaronero 1650 m, 28.vii.1973, F. Willemse c.s.

### Description.

♂ (Pl. 4 Fig. 13). Resembling *pallipes*, but epiphallus distinct. Apical parts of epiphallus (Pl. 7 Fig. 37—38) not fused along their whole length; distal thirds separated, although close together and wider; tip simply rounded without lateral spines.

Coloration differing from *pallipes* in black spots on pronotum, which are larger and fused over the pronotal dorsum into a single, wide, transverse black band, and also in the absence of black spots on frons.

♀. Unknown.

Measurements (length in mm): body 18.0; pronotum 7.5; elytron 3.2; hind femur 16.0.

Locality. N. Irákliou: 67.

Distribution. Known only from Mt. Idi, central Crete.

Discussion. The single available specimen lacks the left hind leg and the left fore leg is slightly deformed. Although much resembling *pallipes*, the different shape of the epiphallus justifies its specific distinction. The differences in the male cercus (Pl. 6 Fig. 27—28) in *pallipes* and *gemellata* should not be considered reliable, as variation in both species is insufficiently known.

The type-locality is described under *E. forcipata*. The specimen was found on *Quercus coccifera*, about 15 m above the spring.

### **Rhacocleis germanica (Herrich-Schaeffer, 1840)**

*Rhacocleis germanica*: Ramme, 1927: 188; Uvarov, 1942: 312.

Localities. N. Chaníou: 12a (Uvarov, 1942); 17c (2 ♂); 20 (1 ♀); 31 (1 ♀); 35d (2 ♂ 2 ♀); N. Réthimnis: 40 (1 ♀); 44a (Ramme, 1927); 49 (2 ♂ 7 ♀ 2 juv.); 50b (1 ♀); N. Irákliou: 71d (1 ♀); 74 (1 ♂ 1 ♀); 86e (Uvarov, 1942).

Distribution. The range of this species extends from southern France to southern Slovakia, Moldavia and western Turkey. It is known from Corsica, Sicily, Kerkyra (= Corfu) and Crete, but not from the other Aegean islands.

### Ephippigerinae

#### **Uromenus (Bolivarius) elegans (Fischer, 1853)**

*Ephippigera idomenaei* Lucas, 1854: 165, Pl. 2 Fig. 1; Werner, 1903: 68, Fig.; Kuthy, 1907: 553.

*Steropleurus siculus*: Ramme, 1927: 188.

*Steropleurus idomenaei*: Uvarov, 1942: 320, Pl. 26 Fig. 31.

Localities. N. Chaníou: 10 (Lucas, 1854); 12a (Uvarov, 1942); 31 (2 ♂ 2 ♀); N. Réthimnis: 38a (Werner, 1903); N. Irákliou: 69 (1 ♂); 71a (1 ♂ 3 ♀); 72 (Ramme, 1927); 86a-b-c (Lucas, 1854; Werner, 1903; Kuthy, 1907); 83a (Werner, 1903); 90b (1 ♂); 97b (2 ♂); N. Lassithíou: 106 (Ramme, 1927); 107a (Ramme, 1927); 109 (1 ♀); 111b (Ramme, 1927); 113 (Ramme, 1927); 119 (1 ♂); 120a (Ramme, 1927); 126 (Ramme, 1927).

Distribution. The range of this species covers the mainland of Italy (from Toscana to Calabria), while it also occurs on the islands Corsica, Elba, Giglio, Sardegna, Sicily and Crete.

Grylloidea

Rhaphidophoridae

Dolichopodinae

**Dolichopoda paraskevi** Boudou-Saltet, 1973

*Dolichopoda* spec. Chopard, 1957: 26. (? partim)

*Dolichopoda paraskevi* Boudou-Saltet, 1973: 58, Fig. A-K.

Distribution. Recorded only from the type-locality: N. Iráklion: 92a-b (Chopard, 1957 ?; Boudou-Saltet, 1973).

**Dolichopoda** spec. Boudou-Saltet, 1973

*Dolichopoda* spec. Boudou-Saltet, 1973: 59, Fig. L-N.

Distribution. Known only from the type-locality: N. Lassithíou: 102b. This species was described but not yet named by lack of a male.

**Dolichopoda** spec. Chopard, 1957

*Dolichopoda* spec. Chopard, 1957: 26; Boudou-Saltet, 1973: 57.

Localities. N. Lassithíou: 98a-b & 99a-b (Chopard, 1957; Boudou-Saltet, 1973). Specimens from caves, which have not been identified due to their juvenile stage.

Troglophilinae

**Troglophilus spinulosus** Chopard, 1921

*Troglophilus spinulosus* Chopard, 1921: 147, Fig.; Chopard, 1957: 26.

Localities. N. Chaníou: 5a (Chopard, 1957); 23a (Chopard, 1957), c (Chopard, 1957); N. Réthimnis: 37b (Chopard, 1921); N. Lassithíou: 102a (Chopard, 1957).

Distribution. Known only from Crete.

Discussion. The species was described after a juvenile male. The precise type-locality is unknown, and placed tentatively under 37b.

**Troglophilus roeweri** Werner, 1927

*Troglophilus roeweri* Werner, 1927: 429, Fig. 1—2, 6; Chopard, 1957: 26.

Distribution. Known only from the type-locality: N. Chaníou: 23d.

Discussion. The record of *Troglophilus cavicola* from Chaniá (22a) in Werner

(1903: 69) refers, according to that author (1927: 429), to *spinulosus* or *roeweri*. According to Chopard (1957: 26) both names could be synonymous.

### **Troglophilus** spec.

*Troglophilus*: Boudou-Saltet, 1973: 57.

Localities. N. Chaníou: 4; 5b; 15f; 23a-b-c; N. Lassithíou: 102b (all Boudou-Saltet, 1973).

Discussion. This record refers to a list of caves from which *Troglophilus* is known without further specification.

Gryllidae  
Gryllinae

### **Gryllus bimaculatus** De Geer, 1773

*Liogryllus bimaculatus*: Ramme, 1927: 189.

Localities. N. Chaníou: 24 (Ramme, 1927); 28c (Ramme, 1927); N. Réthimnis: 50b (2 ♀); N. Iráklion: 68 (1 ♀); 97b (5 juv.).

Distribution. The range of this species covers southern Europe and extends into Africa and Asia.

### **Acheta domesticus** (Linné, 1758)

*Gryllus domesticus*: Ramme, 1927, 189.

Localities. N. Chaníou: 33 (Ramme, 1927); N. Réthimnis: 54b (Ramme, 1927).

Distribution. Occurring throughout most of the world.

### **Tartarogryllus bordigalensis** (Latrelle, 1804)

*Gryllus bordigalensis*: Kuthy, 1907: 553; Ramme, 1927: 189.

Localities. N. Chaníou: 22b-c (Kuthy, 1907; Ramme, 1927).

Distribution. This species is distributed throughout the Mediterranean Region, its range extending into western Asia.

### **Modicogryllus geticus** Vasiliu, 1970

*Gryllus algericus*: Kuthy, 1907: 553. (?)

Locality. N. Chaníou: 22b (Kuthy, 1907).

Distribution. Known from Roumania, Yugoslavia and European Turkey.

Discussion. Kuthy's record probably refers to *algericus* Brunner von Wattenwyl, 1882 (nec Saussure), which was described by Kis (1967) under the name *chopardi*. The latter name being preoccupied, it has been changed into *geticus*. Confirmation is needed, especially because Kuthy's material might belong to another species of this genus, for instance *algirius* (Saussure).

**Gryllomorpha dalmatina** (Ocskay, 1832)

*Gryllomorpha dalmatina*: Werner, 1927: 431; Chopard, 1957: 28.

Localities. N. Chaníou: 18 (Werner, 1927); N. Lassithíou: 102a (Chopard, 1957).  
 Distribution. The range of this species covers the Mediterranean Region.

**Gryllomorpha cretensis** Ramme, 1927

*Gryllomorpha cretensis* Ramme, 1927: 189.

Localities. N. Réthimnis: 44 (Ramme, 1927); N. Irákliou: 57 (1 ♀).

Distribution. Known only from Crete.

Discussion. This species was known only from its type-specimen (♀). Our adult specimen agrees with Ramme's description, except for the coloration of the head, which is not unicolorous. The vertex between the eyes and the fastigium are dark brown, while the occiput, genae and face are much paler. The measurements (length in mm) are as follows: body 9.6; pronotum 1.6; hind femur 6.0; hind tibia 4.5; ovipositor 6.4.

**Discoptila lindbergi** Chopard, 1957

*Discoptila lindbergi* Chopard, 1957: 26, Fig. 1, 3.

Localities. N. Irákliou: 58a-b; 60; 88; N. Lassithíou: 98a; 99a, c; 102a; 115 (all Chopard, 1957).

Distribution. Known only from Crete.

**Mogoplistinae****Arachnocephalus vestitus** Costa 1855

*Arachnocephalus vestitus*: Kuthy, 1907: 554.

Localities. N. Chaníou: 22b (Kuthy, 1907); N. Irákliou: 57 (1 ♀); 65 (1 ♀).

Distribution. This species occurs in the Mediterranean Region.

**Myrmecophilinae****Myrmecophilus (Myrmophilina) ochraceus** Fischer, 1853

*Myrmecophila ochracea*: Kuthy, 1907: 554; Ramme, 1927: 190.

Localities. N. Chaníou: 3 (Ramme, 1927); N. Irákliou: 86c (Kuthy, 1907); N. Lassithíou: 122f (2 ♀).

Distribution. The range of the species covers the Mediterranean Region.

**Trigonidiinae****Trigonidium cicindeloides** Rambur, 1839

*Trigonidium cicindeloides*: Kuthy, 1907: 553; Ramme, 1927: 189.

Localities. N. Chaníou: 8 (1 ♀); 22b (Kuthy, 1907); N. Irákliou: 71c (1 ♂ 7 juv.); N. Lassithíou: 120a (Ramme, 1927).

Distribution. Widely distributed in the Mediterranean Region, Asia, Africa and Madagascar.

### Oecanthinae

#### **Oecanthus pellucens** (Scopoli, 1763)

*Oecanthus pellucens*: Kuthy, 1907: 553; Ramme, 1927: 189.

Localities. N. Chaníou: 15b (Kuthy, 1907); 16 (1 ♀); 22b (Kuthy, 1907); N. Réthimnis: 56 (1 ♀); N. Irákliou: 57 (1 ♀); 84 (3 ♀); 85b (1 ♀); 90b (1 ♂); 97b (1 ♀); N. Lassithíou: 121 (Ramme, 1927); 122e (1 ♀).

Distribution. The range of this species covers central Europe, the Mediterranean Region and N. Africa.

### Gryllotalpoidea

#### Gryllotalpidae

#### **Gryllotalpa gryllotalpa** (Linné, 1758)

*Gryllotalpa vulgaris cophtha*: Werner, 1903: 69.

*Gryllotalpa vulgaris*: Kuthy, 1907: 554; Ramme, 1927: 190.

*Gryllotalpa gryllotalpa*: Werner, 1927: 431.

Localities. N. Chaníou: 19 (Werner, 1927); 22b (Kuthy, 1907); N. Réthimnis: 47b (Werner, 1903).

Distribution. Widely spread throughout Europe, northern Africa and Asia.

Discussion. The locality Kolomodis, recorded by Ramme (1927), could not be traced and is omitted from our list of localities.

### Tetrigoidea

#### Tetrigidae

#### Tetriginae

#### **Tetrix deppressa** (Brisout, 1848)

*Tettix depressus*: Kuthy, 1907: 552.

Locality. N. Chaníou: 22b (Kuthy, 1907)

Distribution. The range covers the Mediterranean Region and extends far into Palaearctic Asia.

#### **Paratettix meridionalis** (Rambur, 1838)

*Paratettix meridionalis*: Kuthy, 1907: 552; Ramme, 1927: 190.

Localities. Nordküste (Ramme, 1927); N. Chaníou: 22b (Kuthy, 1907); N. Réthimnis: 50b (4 ♂ 5 ♀); N. Irákliou: 69 (4 ♀ 2 juv.); 83c (9 ♂ 15 ♀ 1 juv.); 86c (Kuthy, 1907); N. Lassithíou: 117 (1 ♂).

Distribution. This species is distributed throughout the Mediterranean Region, extending into western Asia.

**Acridomorphoidea**

**Pamphagoidea**

**Pamphagidae**

**Pamphaginae**

**Paranocarodes sieberi (Brunner von Wattenwyl, 1882)**

*Paranocarodes sieberi*: Ramme, 1951: 283.

Discussion. This species has only been recorded once (Ramme, 1951), referring to a female labelled: Kreta, Frivaldszky. Further details on the specimen are not given. Demirsoy (1973) distinguishes several subspecies in *sieberi*, from Turkey. His study deals only with Anatolian material and that from the Aegean islands is not discussed. The occurrence in Crete needs confirmation.

**Orchamus raulinii (Lucas, 1854)**

*Acinipe raulinii* Lucas, 1854: 167, Pl. 2 Fig. 2.

*Pamphagus raulinii*: Brunner von Wattenwyl, 1882: 201; Kuthy, 1907: 553.

*Pamphagus yersini*: Werner, 1903: 67 (misidentification?).

*Orchamus raulinii*: Ramme, 1927: 192; Uvarov, 1942: 347; Descamps & Mounassif, 1972: 254; Harz, 1975: 109, Fig. 256, 275, 363—364, 367, 371, 384—391.

Localities. N. Chaníou: 15a (Werner, 1903) ?; 24 (Ramme, 1927); N. Réthimnis: 54a (Kuthy, 1907; Ramme, 1927); N. Irákliou: 86a (Lucas, 1854); N. Lassithíou: 122g (Harz, 1975).

Distribution. So far known only from Crete.

Discussion. The types being lost, Harz selected neotypes from Sitía (122g). However, his neotypes should be disregarded because their designation does not agree with Article 75 of the International Code of Zoological Nomenclature. According to Ramme (1927), Werner's record of *yersini* refers to *raulinii*.

**Orchamus yersini yersini (Brunner von Wattenwyl, 1882)**

*Portethis raulinii* (nec Lucas, 1854): Yersin, 1860: 529, Pl. 10 Fig. 26—28.

*Pamphagus versini* Brunner von Wattenwyl, 1882: 200.

*Orchamus versini*: Ramme, 1927: 192; Uvarov, 1942: 347; Ramme, 1951: 411; Descamps & Mounassif, 1972: 252, Fig. 10—11; Harz, 1975: 108, Fig. 267, 276, 365—366, 369—370, 372—375.

Locality. "Candia" (Brunner von Wattenwyl, 1882; Ramme, 1951; Descamps & Mounassif, 1972; Harz, 1975).

Distribution. The nominate subspecies is recorded from Crete, some Aegean

islands (Kós; Marathókampos, Sámos; Kárpathos), but mainly from Syria and the Lebanon. The subspecies *hebraeus* Uvarov, 1942, is known from Israel.

Discussion. The record from Crete is based on the locality labels of the ♂ holotype and ♀ allotype: Candia, Prof. Zeller, don. Dohrn 1855. However, it is astonishing that since Brunner's record of 1882 or the year of the locality label, 1855, no further material from Crete has become available. An explanation was given by Uvarov (1942) who assumed that the types bear not the correct locality labels and thus *yersini* does not occur in Crete. It is not within the scope of the present paper, to unravel this problem. In any case, confirmation of the occurrence of *yersini* in Crete is needed.

Pyrgomorphidae

Pyrgomorphinae

**Pyrgomorpha conica conica** (Olivier, 1791)

*Pyrgomorpha grylloides*: Griffini, 1894: 92; Werner, 1903: 67; Kuthy, 1907: 553; Ramme, 1927: 192.

Localities. N. Chaníou: 20 (27 ♂ 16 ♀); 22b (Kuthy, 1907); 25a (Griffini, 1894); N. Réthimnis: 38a (Werner, 1903); 54b (Ramme, 1927); N. Irákliou: 71a-b (8 ♂ 13 ♀); 73 (Ramme, 1927); 74 (1 ♀); 76 (Ramme, 1927); 78 (Ramme, 1927); 81 (1 ♀); 83a (Werner, 1903); 85a-b-c (3 ♂ 7 ♀); 86c (Kuthy, 1907), d (Ramme, 1927); 90a-b (2 ♀); 91 (Kuthy, 1907); 93 (Ramme, 1927); N. Lassithíou: 104 (1 ♀); 105b (2 ♂ 2 ♀); 108 (1 ♂); 109 (2 ♂); 111b (Ramme, 1927); 119 (1 ♀); 122b-c (6 ♂ 11 ♀).

Discussion. A revision of *Pyrgomorpha* is currently in progress (Kevan, 1971 and 1974). Mr. Kevan studied a sample of our material and kindly informed us that we are dealing with the nominate subspecies.

Acridoidea

Catantopidae

Tropidopolinae

**Tropidopola longicornis** (Fieber, 1853) subspec. nov. ?

(Fig. 10,11, Pl. 8 Fig. 42—43)

Localities. N. Irákliou: 71b (2 ♂ 4 ♀), c (1 ♂), d (1 ♂ 3 ♀, reared to adult stage in October); 84 (3 ♂); 86f (1 ♂); 90b (12 ♂ 10 ♀); N. Lassithíou: 122e (11 ♂ 10 ♀).

Discussion. *Tropidopola* has not yet been recorded from Crete. The latest revision of the Mediterranean species was given by La Greca (1964). He mentioned the following taxa: *cylindrica cylindrica* (Marshall, 1836) from the western Mediterranean area; *graeca graeca* Uvarov, 1926, from mainland Greece, southern and western Anatolia, and Cyprus; *graeca transjonica* La Greca, 1964, from Taranto, Apulia, S. Italy; *longicornis longicornis* Fieber, 1853, from Egypt (type-locality proposed by Uvarov, 1926: 173, which is not in accordance with Fieber's

original data); and *longicornis syrica* (Walker, 1871) from Syria and Palestine. Our material does not fit any of these taxa. The shape of the head (Pl. 8 Fig. 42—43) and of the male cercus resemble *longicornis* rather than *graeca*. The antennae are shorter than in nominate *longicornis* and resemble those of *longicornis syrica*. The longest middle segments are between 1.2 to 1.6 times as long as wide. However, the phallic complex (studied in nine males) differs from that of *longicornis* in the apex which is comparatively more elongate, slender, while the outline of the apical penis valves (in lateral aspect) is from hardly (Fig. 10) to moderately (Fig. 11) sigmoid and not angulate or incised as figured by La Greca (1964: Fig. 37—38). After a study of material from other parts of the Mediterranean Region, it became apparent that, due to insufficient knowledge of the individual variation, some characters are not reliable. We consider the *Tropidopola* population of Crete to constitute a distinct geographical race, allied to nominate *longicornis*.

### Calliptaminae

#### *Calliptamus italicus* (Linné, 1758)

*Caloptenus italicus*: Griffini, 1894: 92 (?); Werner, 1903: 67 (?); Kuthy, 1953 (?).

*Calliptamus italicus*: Werner, 1927: 431; Jago, 1963: 320.

*Calliptamus italicus grandis*: Ramme, 1927: 193.

Localities. Kriti (Jago, 1963); N. Chaníou: 26b (Werner, 1927); 31 (3 ♀); N. Réthimnis: 48 (3 ♂ 1 ♀); 49 (1 ♂ 5 ♀); 50b (1 ♂ 1 ♀); N. Iráklion: 61 (1 ♂); 71a (3 ♂ 2 ♀), d (3 ♂ 3 ♀); N. Lassithíou: 106 (Ramme, 1927); 107a (Ramme, 1927); 109 (2 ♂); 111b (Ramme, 1927); 114 (Ramme, 1927); 119 (1 ♂).

Distribution. The range of this species covers southern Europe and Turkey, from where it extends into central Asia.

Discussion. Griffini (1894), Werner (1903) and Kuthy (1907) mentioned only *italicus* and not *barbarus*. However, the latter species is by far more common in Crete as well as throughout southern Europe, where *italicus* ranks second (cf. Jago, 1963: 320). Therefore their records are not included in the locality list above.

#### *Calliptamus barbarus barbarus* (Costa, 1836)

*Calliptamus siculus*: Ramme, 1927: 193.

*Calliptamus barbarus barbarus*: Ramme, 1951: 311; Jago, 1963: 329, 334.

Localities (summary). N. Chaníou: 6; 9; 14—17; 20; 31; N. Réthimnis: 37—40; 44; 48—50; 56; N. Iráklion: 57; 61; 63—65; 67; 69; 71; 74; 82; 84; 87; 89—90; 96—97; N. Lassithíou: 105—107; 116; 120—122; 124—125.

Distribution. Widely distributed throughout the Mediterranean Region, its range extending far into Palaearctic Asia.

Discussion. The data of our material of *barbarus* (154 ♂ 205 ♀) agree with Jago's remark that *barbarus* in Crete occurs up to 1700 m. The same can be said of *italicus*, which lives up to 1100 m. In the same paper, Jago mentioned the population of *barbarus* in Crete to have bright orange legs, and "many specimens

show separate inner femoral spots". Our specimens have indeed bright orange inner sides of the hind femora and pale orange hind tibiae, but the inner femoral spots are usually fused.

### Eyprepocneminae

#### **Heteracris littoralis (Rambur, 1838)**

Localities. N. Chaníou: 20 (1 ♂ 4 juv.); N. Irákliou: 71a (2 ♂ 1 ♀), d (3 juv.); 74 (48 ♂ 32 ♀).

Distribution. The range of the nominate subspecies covers southern Spain (type-locality), northern, western and eastern Africa, and extends into S.W. Asia.

Discussion. Our material was compared with that from southern Spain. The colour of the hind tibiae and the shape of the male subgenital plate agree with the nominate subspecies rather than with *littoralis similis* (Brunner von Wattenwyl, 1861) or other subspecies. At Pitsídia (74) the species is abundant and lives in the dunes under extremely dry and hot conditions.

Till now not recorded from Crete.

### Catantopinae

#### **Pezotettix giornae (Rossi, 1794)**

*Platypyma giornae*: Griffini, 1894: 92.

*Pezotettix giornae*: Kuthy, 1907: 553; Ramme, 1927: 193.

Localities. N. Chaníou: 9 (1 ♀); 15b (Kuthy, 1907), e (1 ♂ 2 ♀); 16 (2 ♂ 3 ♀); 17a (Griffini, 1894); 20 (1 ♀); 31 (1 ♀); 36 (Ramme, 1927); N. Réthimnis: 37c (Ramme, 1927); 39 (Ramme, 1927); 40 (3 ♂ 2 ♀); 41 (3 ♂ 3 ♀); 49 (1 ♂ 3 ♀); 56 (4 ♂ 2 ♀); N. Irákliou: 57 (5 ♂ 2 ♀); 61 (1 ♀); 63 (2 ♂); 65 (1 ♂ 7 ♀); 82 (4 ♂ 8 ♀).

Distribution. Widely distributed in the southern part of central Europe and the Mediterranean Region.

### Cyrtacanthacridinae

#### **Anacridium aegyptium (Linné, 1764)**

*Acridium (Gryllus) lineola*: Lucas, 1854: 169.

*Acridium aegyptium*: Griffini, 1894: 92; Werner, 1903: 67; Kuthy, 1907: 553.

*Anacridium aegyptium*: Werner, 1927: 431; Ramme, 1927: 193.

Localities. N. Chaníou: 2 (Lucas, 1854); 6b (1 ♂ 2 ♀); 21 (Werner, 1903); 22c (Ramme, 1927); 26b (Werner, 1927); 28a-b (Lucas, 1854; Griffini, 1894); 30 (Werner, 1903); 35d (2 ♂ 1 juv.); 36 (Ramme, 1927); N. Réthimnis: 41 (1 juv.); 50b (2 ♂); N. Irákliou: 57 (1 ♂); 63 (1 juv.); 65 (1 ♀); 71a (1 ♀), d (2 ♂ 2 juv.); 74 (1 juv.); 78 (Ramme, 1927); 83c (1 ♂ 1 juv.); 86a (Lucas, 1854), c.d (Kuthy, 1907; Ramme, 1927), f (1 ♂ 2 ♀); 90b (2 ♂); 97a-b (2 ♀); N. Lassithíou: 104 (1 ♀); 122a (Lucas, 1854); 123 (1 ♀).

Distribution. The range of this species covers southern Europe, large parts of Africa, and S.W. Asia.

Acrididae  
Gomphocerinae

***Ochrilidia pruinosa* Brunner von Wattenwyl, 1882**

*Ochrilidia pruinosa* Brunner von Wattenwyl, 1882: 92.

*Platypterna pruinosa*: Kuthy, 1907: 552; Ramme, 1927: 191, 194; Salfi, 1931: 284, Fig. 48—57.

Localities. N. Chaníou: 20 (1 juv.); 22b-c (Kuthy, 1907; Ramme, 1927); 35b (6 ♂ 3 ♀), d (1 juv. ♀, reared to adult stage in November); N. Irákliou: 84 (2 ♂); 85c (4 ♂ 1 ♀ 1 juv.); 89 (10 ♂ 9 ♀ 4 juv.); 90b (1 ♂ 1 ♀); N. Lassithíou: 123 (2 ♂); 125a (63 ♂ 12 ♀).

Distribution. This species, described from Rhódos, has been recorded from Crete, several islands of the Cyclades and Sporades, Cyprus and Mediterranean E. Turkey.

Discussion. The present material has been compared with a large topotypic series from Rhódos, which agrees fairly well with the descriptions and figures of Brunner von Wattenwyl and Salfi. The black spot on the lower inner lobe of the hind knee is uniformly present in the topotypic material and in material from Crete. However, in the specimens from Crete, the typical pruinose coloration is lacking in both sexes, except for the males from Frágo Kástello (35b), in which it is present although less conspicuous than in the topotypic specimens. Also the proportions of the body, tegmina and legs in the specimens from Crete are slightly more robust than in the topotypes. We are not convinced that the *Ochrilidia* population of Crete is identical with *pruinosa*.

From Crete another species of *Ochrilidia* has been recorded, viz., *tibialis* (Fieber). At present its identity is not traceable, as will be pointed out below.

Some references are given:

*Platypterna tibialis* Fieber, 1853: 98; Ramme, 1927: 194; Salfi, 1931: 255, 322, Fig. 179—181.

*Ochrilidia tibialis*: Brunner von Wattenwyl, 1882: 91, Fig. 22; Werner, 1901: 272; Johnston, 1956: 716; Harz, 1975: 603, Fig. 2169—2178.

Fieber's description is unsatisfactory. The locality reads: „Griechenland. Straube. Fieb.”. Brunner von Wattenwyl's description gives some useful details. As to the distribution he recorded: „Vorkommen: Griechenland (Fieb.), Candia (c.m.), Spanien (Mus. Genf.). — Ausserdem in Aegypten und Syrien (c.m.”). Salfi gave a full description and figures of the specimen on which Brunner von Wattenwyl's record “Candia” was based. Salfi presumed this specimen to represent Fieber's type. However, Mr. Kaltenbach (Vienna Museum) kindly informed us (in litt. 17.X.1973): „Unser stark beschädigtes und vielfach zusammengeleimtes Exemplar von *Platypterna tibialis* Fieb. angeblich aus der Coll. Fieber trägt an der Nadel 5 Etiketten mit folgender Beschriftung: 1. 9481. — 2. Coll. Br. v. W. ex Coll. Fieber Kreta. — 3. det. Br. v. W. *Ochrilidia tibialis*. — 4. M. Vienna. — 5. *Platypterna tibialis* Fieb. ♀ — M. Salfi det. Die handgeschriebenen Original-

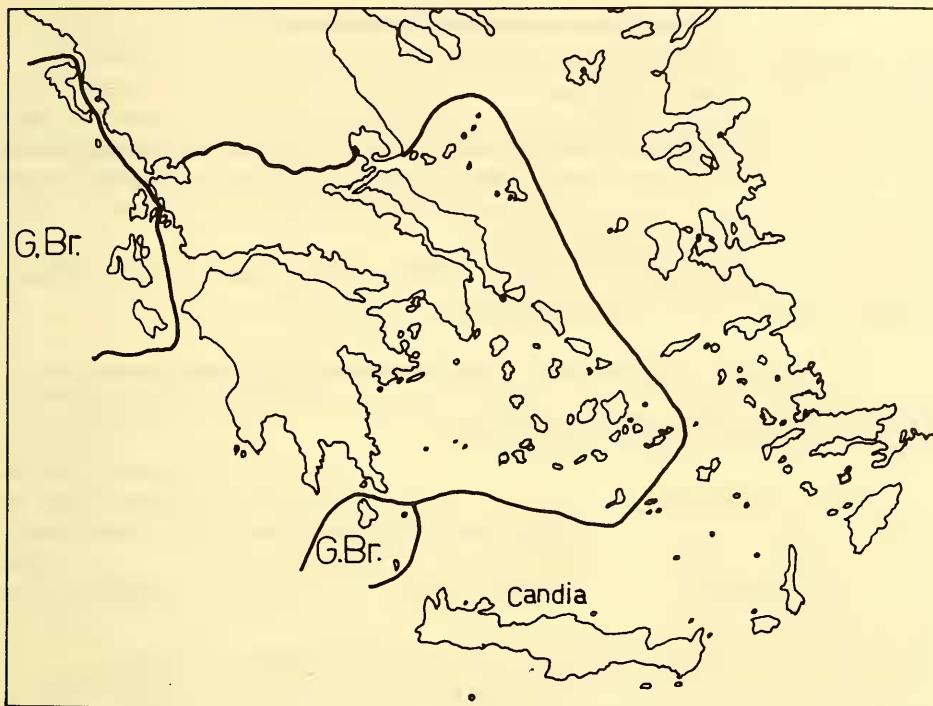


Fig. 12. Greek area in 1850: Greece within the black lines; G. Br., Ionian islands belonging to the United Kingdom; remaining part, Turkey (after A. Stieler, Hand Atlas, Gotha, 1864)

etiketten Brunners (von Fieber ist anscheinend kein Etiket erhalten !) sind in Brunner's Inventar eingeklebt und zeigen die Beschriftung: 1. 9481 *Platypterna*. — 2. *tibialis* Fryvw. 9481 Kreta. „Fryvw.“ steht wahrscheinlich p. err. für „Fieb.“! Nach dem von Ihnen angegebenen Zitat Brunner's ist es durchaus möglich, dass das Tier Fieber's gar nicht erhalten ist und die gedruckten Etiketten an der Nadel (erst nach dem Tod Brunner's gedruckt) auf Grund eines Missverständnisses den Vermerk „ex Coll. Fieber“ enthalten. In Wirklichkeit handelt es vielleicht um das Tier aus Brunner's eigener Sammlung. Unser ♀ hat helle Kniee wie Salfi angibt. Sonst ist die Art nur durch ein Expl. aus Syrien bei uns vertreten.“

Thus, the validity of the “Kreta” labelled specimen as holotype is at least doubtful. Furthermore, as far as we could trace, additional material which both agrees with Brunner's specimen and originates from Crete or Greece has never more been found since Brunner. Therefore, the occurrence within the region of Greece of an *Ochrilidia* species which lacks the black spots of the lower inner lobe of the hind knee is doubtful. Unless such material will be found and a neotype can be selected, Fieber's *tibialis* is not identifiable. It is pointed out here, that in Fieber's time „Griechenland“ did not cover the actual area of Greece (Fig. 12). Attempts to find out the origin of Fieber's specimen, which he obtained from Straube, a dealer, were not successful.

### Dociostaurus maroccanus (Thunberg, 1815)

*Stauronotus maroccanus*: Kuthy, 1907: 552.

*Dociostaurus maroccanus*: Ramme, 1927: 191.

Localities. N. Réthimnis: 54b (Ramme, 1927); 55 (1 ♂); N. Irákliou: 71a (21 ♂ 28 ♀); 75 (Ramme, 1927); 80 (Ramme, 1927); 86c-d (Kuthy, 1907; Ramme, 1927); 90a (1 ♂ 1 ♀); N. Lassithiou: 105b (3 ♂ 3 ♀); 109 (6 ♂ 1 ♀); 110 (Ramme, 1927); 111b (Ramme, 1927).

Distribution. This species occurs in southern Europe and northern Africa, its range extending far into Palaearctic Asia.

### Chorthippus (Glyptobothrus) brunneus brunneus (Thunberg, 1815)

*Stenobothrus bicolor*: Werner, 1903: 67; Kuthy, 1907: 552.

*Stauroderus bicolor*: Werner, 1927: 431; Ramme, 1927: 191.

Localities. N. Chaníou: 11 (Werner, 1903); 15c (Werner, 1927), e (1 ♂); 17b (Werner, 1927); 22b (Kuthy, 1907); N. Réthimnis: 46 (Kuthy, 1907); 54c (1 ♂); 55 (4 ♀); 56 (3 ♂ 10 ♀); N. Irákliou: 57 (3 ♂ 2 ♀); 64 (1 ♂); 65 (4 ♂ 5 ♀); 83b (1 ♂ 1 ♀); 86c (Kuthy, 1907); 91 (Kuthy, 1907); 97a-b (6 ♂); N. Lassithiou: 105b (1 ♂); 120b (2 ♂).

Distribution. Widely distributed throughout Europe and western Asia.

Discussion. The specimens from Crete are slightly smaller than those from the mainland of Europe and Turkey, and the elytra are slightly less attenuate.

Werner (1903: 66) recorded a male from Chaniá and a male from Réthimnon under *Stenobothrus petraeus* Brisout. His material could not be traced in the Vienna Museum (Kaltenbach, in litt. 8.vii.1975). According to Werner's paper, he had no other material of *petraeus* available. He mentioned that the hind tibiae of these males were yellowish red, which disagrees with his identification. As far as could be traced, there are no further records of *petraeus* from Crete, the Cyclades and the Sporades, nor from the Peloponnese. For the time being, we therefore omit *Omocestus petraeus* (Brisout) from our list.

From Omalós (15), Griffini (1894: 92) recorded a juvenile specimen under *Stenobothrus* spec. ?. From this locality both *brunneus* and *biroi* are known.

### Chorthippus (Glyptobothrus) biroi (Kuthy, 1907)

(Pl. 10 Fig. 47—48)

*Stenobothrus biroi* Kuthy, 1907: 552, 554.

*Stauroderus biroi*: Ramme, 1927: 194.

*Chorthippus (Glyptobothrus) biroi*: Harz, 1975: 876, Fig. 3157—3158, 3285—3291.

Localities. N. Chaníou: 9 (2 ♀); 13 (18 ♂ 26 ♀); 14 (5 ♂ 2 ♀); 15b (Kuthy, 1907), e (16 ♂ 10 ♀); 16 (14 ♂ 5 ♀); 17c (1 ♀), d (Harz, 1975); 31 (4 ♂ 4 ♀); N. Réthimnis: 40 (1 ♂); 48 (2 ♂ 3 ♀); 49 (16 ♂ 8 ♀); 50b (1 ♂); 53 (3 ♂ 1 ♀); 56 (2 ♂ 3 ♀); N. Irákliou: 57 (1 ♀); 65 (3 ♂ 8 ♀); 67 (3 ♂ 1 ♀); 82 (1 ♀); 87 (2 ♂); 90c (3 ♂ 4 ♀); 97b (1 ♂ 3 ♀), c (2 ♂); N. Lassithiou: 101c (Harz, 1975); 116 (4 ♂ 8 ♀); 122d (3 ♂ 1 ♀).

**Distribution.** So far known only from Crete.

**Discussion.** This species occurs from lowland up to 2000 m. The shape of the lateral pronotal keels is rather variable. The colour of the hind tibia ranges from pale yellowish to blackish brown. Opportunity is taken here to give some figures of the general appearance of this little known species (Pl. 10 Fig. 47—48).

### Truxalinae

#### **Truxalis nasuta** (Linné, 1758)

*Tryxalis procera*: Lucas, 1854: 167 (misidentification?).

*Tryxalis variabilis*: Lucas, 1854: 167.

*Tryxalis unguiculata*: Brunner von Wattenwyl, 1882: 90; Griffini, 1894: 91; Werner, 1903: 66; Kuthy, 1907: 552.

*Acridella variabilis*: Werner, 1927: 431.

*Acridella nasuta*: Ramme, 1927: 190.

*Truxalis nasuta*: Dirsh, 1951: 206, Fig. 139—149, 217, map 9.

**Localities.** Crete (Dirsh, 1951); Candia (Brunner v.W., 1882); N. Chaniou: 22a-b (Werner, 1903; Kuthy, 1907); 24 (Ramme, 1927); 25a-b (Griffini, 1894; Werner, 1927); 26a-b (Werner, 1927; Ramme, 1927); 28b (Griffini, 1894); 35a (Dirsh, 1951); N. Réthimnis: 37c (Ramme, 1927); 38a-b (Werner, 1903; Ramme, 1927); 46 (Kuthy, 1907); 47a (Griffini, 1894); 54b (Ramme, 1927); N. Irákliou: 71a-b (1 ♂ 3 ♀); 77 (Ramme, 1927); 83a (Werner, 1903); 85a (1 ♂); 86a-b-c-d (Lucas, 1954; Werner, 1903; Kuthy, 1907; Ramme, 1927); 90a (1 ♂); N. Lassithiou: 104 (1 ♂); 105a (Dirsh, 1951), b (1 ♀); 111b (Ramme, 1927); 112 (Ramme, 1927); 114 (Ramme, 1927); 122b-c (2 ♂).

**Distribution.** The range of this species covers the southern parts of the mainland of Europe, the Mediterranean islands, and northern Africa, and extends into Palestina and Syria.

**Discussion.** The record of *procera* Klug, 1830, by Lucas (1854) is most probably erroneous, as Crete is widely separated from the area of distribution of that species (Dirsh, 1951: 183, map 8).

### Oedipodinae

#### **Locusta migratoria** Linné, 1758

*Oedipoda Gryllus migratoria*: Lucas, 1854: 170.

*Pachytillus danicus*: Kuthy, 1907: 553.

*Locusta migratoria* ph. *danica*: Ramme, 1927: 191.

**Localities.** N. Irákliou: 71d (2 ♂); 86a (Lucas, 1854), c (Kuthy, 1907); N. Lassithiou: 120a (Ramme, 1927).

**Distribution.** According to Harz (1975: 466) the population of Crete belongs to subspec. *cinerascens* (Fabricius, 1781), which is distributed throughout southern Europe.

### **Oedaleus decorus (Germar, 1826)**

*Oedaleus nigrofasciatus*: Werner, 1903: 67.

*Oedaleus decorus*: Ramme, 1927: 191.

Localities. N. Réthimnis: 38a (Werner, 1903); N. Irákliou: 86b (Werner, 1903); d (Ramme, 1927); 83a (Werner, 1903); N. Lassithíou: 106 (Ramme, 1927).

Distribution. Widely distributed throughout S. Europe, N. Africa and Asia.

### **Aiolopus strepens (Latreille, 1804)**

*Epacromia strepens*: Kuthy, 1907: 552.

*Aeolopus strepens*: Ramme, 1927: 191.

*Aiolopus strepens*: Hollis, 1968: Fig. 51.

Localities (summary). N. Chaníou: 15; 17; 22; 34; 36; N. Réthimnis: 37—43; 45; 48; 50; 56; N. Irákliou: 57; 63; 65; 67; 69; 71; 74; 83—87; 89—90; 97; N. Lassithíou: 105; 107; 117; 122; 125.

Distribution. The range of this common species covers most of the Mediterranean Region.

Discussion. Our material (109 ♂ 96 ♀) was found from the lowland up to 1700 m.

### **Aiolopus thalassinus thalassinus (Fabricius, 1781)**

*Oedipoda Acridium laeta*: Lucas, 1854: 170.

*Epacromia thalassinia*: Kuthy, 1907: 552.

*Aeolopus thalassinus*: Ramme, 1927: 191.

*Aiolopus thalassinus thalassinus*: Hollis, 1968: Fig. 84.

Localities. N. Chaníou: 20 (2 ♂); 22b (Kuthy, 1907); 32 (Lucas, 1854); N. Réthimnis: 38b (Ramme, 1927); 50a (2 ♀); N. Irákliou: 71a-b-c-d (13 ♂ 16 ♀); 84 (1 ♂); 85a (5 ♂ 1 ♀); 86a (Lucas, 1854), d (Ramme, 1927); 90b (2 ♀); 95 (Ramme, 1927); 97b (1 ♂ 1 ♀), d (1 ♀); N. Lassithíou: 108 (1 ♂); 109 (3 ♂); 120b (1 ♂); 122b (3 ♂ 4 ♀), e (2 ♂ 6 ♀).

Distribution. The nominate subspecies occurs in southern Europe, the whole of Africa, its range moreover extending far into southwestern Asia.

Discussion. A record from Mt. Idi (52a) (Lucas, 1854) appears doubtful because the preferred habitat of this species differs very much from that offered by Mt. Idi.

### **Acrotylus longipes longipes (Charpentier, 1843)**

*Acrotylus longipes*: Kuthy, 1907: 553.

Localities. N. Chaníou: 20 (4 ♂ 6 ♀); 22b (Kuthy, 1907); N. Irákliou: 71d (1 ♀); 74 (22 ♂ 19 ♀); 85a (8 ♂), c (13 ♂ 13 ♀); 89 (14 ♂ 14 ♀); 90b (20 ♂ 14 ♀); 97d (21 ♂ 16 ♀).

Distribution. Widely distributed in southeastern Europe, southwestern Asia, and Africa.

Discussion. The species lives predominantly along the seashore. The hind wing in our material is yellow or colourless, but not orange.

### **Acrotylus patruelis (Herrich-Schaeffer, 1838)**

*Acrotylus patruelis*: Griffini, 1894: 92; Ramme, 1927: 192.

Localities. N. Chaníou: 7 (Ramme, 1927); 13 (1 ♀); 28b (Griffini, 1894); N. Réthimnis: 37c (Ramme, 1927); 42a-b (Ramme, 1927); 43 (Ramme, 1927); 50b (5 ♂ 1 ♀); 56 (2 ♂ 1 ♀); N. Iráklion: 65 (1 ♂); 71a (2 ♂), d (1 ♂); 87 (1 ♂); 97d (2 ♂ 2 ♀); N. Lassithíou: 104 (1 ♂); 105b (1 ♂); 109 (1 ♂ 1 ♀); 111c (1 ♂ 1 ♀); 177 (1 ♀); 119 (1 ♀); 122d (1 ♂); 125b (1 ♂).

Distribution. The range of this species covers the Mediterranean Region, southwestern Asia and most of Africa, including Madagascar. In Crete, the species occurs up to 1800 m (13).

### **Acrotylus insubricus inficitus (Walker, 1870)**

*Acrotylus insubricus*: Kuthy, 1907: 552; Ramme, 1927: 192.

*Acrotylus insubricus inficitus*: Mařan, 1958: 177.

Localities. Kreta (Mařan, 1958); N. Chaníou: 3 (Ramme, 1927); 20 (1 ♂); 22b (Kuthy, 1907); 24 (Ramme, 1927); 36 (Ramme, 1927); N. Réthimnis: 38b (Ramme, 1927); 39 (Ramme, 1927); 44b (1 ♀); 50b (3 ♂); 51 (Ramme, 1927); N. Iráklion: 64 (1 ♂); 71d (1 ♀); 75 (Ramme, 1927); 82 (1 ♀); 83c (1 ♂ 1 ♀); 84 (5 ♂ 2 ♀); 85c (1 ♂); 86d (Ramme, 1927), f (1 ♀); 87 (6 ♂ 2 ♀); 89 (2 ♀); 90b (2 ♂), c (5 ♂ 1 ♀); 97c (2 ♀); N. Lassithíou: 116 (3 ♂ 2 ♀); 120a (Ramme, 1927); 124 (1 ♀).

Distribution. According to Mařan, this subspecies occurs in central and southwestern Asia, the southern part of European USSR, northeastern Africa, and Crete. Our material agrees with his description of the subspecies.

### **Oedipoda caerulescens (Linné, 1758)** (Pl. 9 Fig. 44)

*Oedipoda Gryllus coerulescens*: Lucas, 1854: 170.

*Oedipoda caerulea* [sic]: Griffini, 1894: 92.

*Oedipoda coerulescens*: Kuthy, 1907: 553; Werner, 1927: 431; Ramme, 1927: 191.

Localities (summary): N. Chaníou: 2; 7; 9; 13—17; 22; 25—28; 31; N. Réthimnis: 37; 39—41; 44; 48—50; 56; N. Iráklion: 57; 61; 63—65; 67; 69; 71; 74; 82; 86—87; 90; 94; 97; N. Lassithíou: 105; 107; 109—111; 119; 122.

Distribution. This species is widely distributed in Europe, northern Africa and western Asia.

Discussion. This common species (studied: 148 ♂ 136 ♀) occurs in Crete up to 1800 m. The black fascia of the hind wing, although with a wide overlap, is less strongly developed in the specimens from Crete than in those from the mainland of Greece (Pl. 9 Fig. 44).

**Oedipoda venusta** Fieber, 1853  
(Pl. 10 Fig. 45—46)

*Oedipoda venusta* Fieber, 1853: 23; Brunner von Wattenwyl, 1882: 161; Werner, 1903: 67 (?); Kuthy, 1907: 553; Ramme, 1927: 192; Harz, 1975: 489, Fig. 1615 (*Mioscirtus v.*), 1747.

*Oedipoda gratiosa*: Werner, 1903: 67 (misidentification ?).

**Localities.** Crete (Brunner v. W., 1882); N. Chaníou: 13 (7 ♂ 6 ♀); 14 (3 ♀); 15b (Kuthy, 1907), e (8 ♂ 5 ♀), g (Harz, 1975); 16 (3 ♂ 4 ♀); N. Réthimnis: 38a (Werner, 1903) ?; 52b (Kuthy, 1907); 53 (16 ♂ 12 ♀); 54a (Kuthy, 1907); 55 (6 ♂ 6 ♀); N. Iráklion: 67 (11 ♂ 8 ♀); Timbáki, see discussion (Harz, 1975); 83a (Werner, 1903) ?; 94 (Ramme, 1927); N. Lassithíou: 100 (Ramme, 1927); 101b (2 ♀); 103 (Ramme, 1927); 107b (2 ♀); 122c (13 ♂ 13 ♀).

**Distribution.** Despite Fieber's original record "Griechenland", this species is, as far as known, confined to Crete.

**Discussion.** The present material agrees with Ramme's comment that the tip of the hind wing in many specimens is but scarcely infuscate (Pl. 10 Fig. 45—46). The upper keel of the hind femur is lowered in its apical part, although not as conspicuous as in some other species of *Oedipoda*. Attention is drawn to this character because *venusta* has been placed in some other genera in the older literature (*Scin-tharista*, *Mioscirtus*, *Microscirtus*, *Morphacris*). This was apparently due to erroneous descriptions, reading in Fieber "Hinterschenkel oben mit ganzem Kiel" and in Brunner von Wattenwyl "femora postica carina superiore haud interrupta".

Among the localities listed above, the name Timbáki refers to: Tympaki, 29.-31.vii.1958, H. Eckerlein (Harz, 1975: Fig. 1747). The locality could no more be included and numbered in the list of localities and on the map, the manuscript being finished.

The male type is damaged and preserved in the Vienna Museum. Harz designated neotypes, which should be disregarded being not in agreement with Article 75 of the International Code of Zoological Nomenclature.

The records of *venusta* and *gratiosa* by Werner (1903) refer to juvenile specimens from the same localities. His material could not be traced in the Vienna Museum (Kaltenbach, in litt. 8.vii.1975). Identification of juvenile specimens in *Oedipoda* species is not reliable. As *gratiosa* (= *miniata* Pallas) has been only recorded once and the record is doubtful, we omit this species from the faunal list of Crete.

**Sphingonotus spec.**

*Oedipoda Gryllus coerulans*: Lucas, 1854: 170.

*Sphingonotus caerulans*: Griffini, 1894: 92.

*Sphingonotus coerulans*: Kuthy, 1907: 552; Ramme, 1927: 192.

*Sphingonotus rubescens rubescens*: Mistshenko, 1936: 170.

**Localities.** Crete (Mistshenko, 1936; 3 ♀); N. Chaníou: 9 (1 ♀); 14 (7 ♂ 10 ♀); 15b (Kuthy, 1907), e (16 ♂ 12 ♀); 17c (1 ♂); 20 (2 ♂); 28b (Griffini, 1894); N. Réthimnis: 37a (Lukas, 1854), c (Ramme, 1927); 38b (Ramme, 1927); 42a (Ramme, 1927); 45 (Ramme, 1927); 50b (20 ♂ 14 ♀); 53 (10 ♂ 5 ♀); N. Iráklion: 67 (6 ♂ 1 ♀); 71a (1 ♂), c (1 ♀); 74 (1 ♀); 79 (Lukas, 1854); 86c-d (Kuthy, 1907); Ramme,

1927); 90a-b (2 ♂ 2 ♀); 93 (Ramme, 1927); 97d (20 ♂ 17 ♀); N. Lassithíou: 101a (Ramme, 1927); 105b (4 ♂ 8 ♀); 108 (2 ♂); 109 (2 ♂ 4 ♀); 111c (1 ♂ 2 ♀); 113 (Ramme, 1927); 120b (2 ♂ 1 ♀); 122b-c-d-e (9 ♂ 11 ♀).

**Discussion.** *Sphingonotus* is common throughout Crete, from the seashore up to 1800 m. The identification of our material offered considerable difficulties. It agrees partly with *caerulans* (L.) (especially with *caerulans exornatus* Nedelk.), partly with nominate *rubescens* (Walker). However, the greater part of the material is intermediate between these taxa. Especially in longer series from one locality all transitional forms are present. We agree with the critical remarks by Ramme (1951: 406) and abstain from identification of the present material from Crete. We assume that the previous records of *Sphingonotus* from Crete refer to material similar to ours.

#### Acridinae

##### *Acrida turrita* (Linné, 1758) (?)

*Tryxalis nasuta* (nec Linné); Kuthy, 1907: 552.

**Localities.** N. Chaníou: 20 (1 ♂ 1 juv.); 22b (Kuthy, 1907); 35b (1 juv.); N. Réthimnis: 40 (2 juv.); 41 (1 juv.); 50b (1 ♂ 2 juv.); N. Iráklion: 64 (1 ♀); 71d (2 juv.); 74 (2 juv.); 84 (12 ♂ 7 ♀); 85c (6 ♂ 1 ♀); 86c (Kuthy, 1907); 87 (4 ♂ 1 ♀); 89 (11 ♂ 10 ♀); 90b (9 ♂ 3 ♀); 97c (2 juv.), d (4 ♂).

**Distribution.** Widely distributed in Africa and recorded from Sicily and Vulcano I.

**Discussion.** Our material has been identified with the help of the latest revision of the genus (Dirsch, 1954). Judging from the position of the transverse sulcus of the pronotum, which is clearly behind the middle of the pronotum, the population of Crete should belong to *turrita*. However, we are not certain because it is difficult to distinguish it from *bicolor* (Thunberg) (recently synonymized with *ungarica* Herbst), which is the common species of this genus in the Mediterranean Region.

In the older literature there is considerable confusion about the nomenclature in *Acrida* and *Truxalis* species. If the original material cannot be re-examined, old records should be disregarded. However, in this particular case Kuthy's records are interpretable: he recorded both *Tryxalis nasuta* L. and *T. unguiculata* Rambur, which represent *Acrida turrita* (L.) and *Truxalis nasuta* (L.), respectively (compare Brunner von Wattenwyl, 1882: 87—90).

#### CONCLUSIONS

Among the present material from Crete, the following new taxa are described: *Platycleis (Platycleis) grisea cretica* subspec. nov., *Eupholidoptera forcipata*, *E. latens*, *E. pallipes* and *E. gemellata*. As far as we could trace, the following species are new to the fauna of Crete: *Phaneroptera n. nana* Fieber, *Conocephalus (Xiphidion) discolor* Thunberg, *Homorocoryphus n. nitidulus* (Scopoli), *Sepiana sepium* (Yersin), *Heteracris l. littoralis* (Rambur) and *Tropidopola longicornis* (Fieber) (subspec.

nov.?). The occurrence of *Platycleis (Platycleis) escalerae* Bolívar could be confirmed. The identity of the *Acrida* and *Sphingonotus* material from Crete could not be established.

For various reasons, previous records of *Modicogryllus geticus* Vasiliu, *Paranacarodes fiebri* (Brunner v. W.) and *Orchamus y. yersini* (Brunner v. W.) are doubtful and need confirmation. According to Chopard (1957) *Troglophilus roeweri* Werner could be synonymous with Chopard's *T. spinulosus*. It is pointed out that, for the time being, the identity of *Ochrilidia tibialis* (Fieber) is not clear. Previous records of *Acrometopa servillea* (Brullé), *Eupholidoptera chabrieri* (Charpentier), *Troglophilus cavicola* (Kollar), *Omocestus petraeus* (Brisout) and *Oedipoda miniata* (Pallas) are considered unreliable.

In all, we listed at least 63 species of Orthopteroidea (= Orthoptera-Saltatoria) occurring in Crete. The fauna of Crete is typically insular, i.e. comparatively poor in species. The range of about one third of the species is, as far as known, confined to the island, or covers Crete and some neighbouring islands of the Cyclades. A list of these species is given here:

*Acrometopa cretensis* Ramme

*Poecilimon cretensis* Werner

*Platycleis (Platycleis) grisea cretica* subsp. nov.

*Eupholidoptera astyla* (Ramme)

*E. cretica* Ramme

*E. forcipata* spec. nov.

*E. latens* spec. nov.

*E. pallipes* spec. nov.

*E. gemellata* spec. nov.

*Dolichopoda paraskevi* Boudou-Saltet

*D. spec.* Boudou-Saltet

*Troglophilus spinulosus* Chopard

*T. roeweri* Werner (synon.?)

*Gryllomorpha cretensis* Ramme

*Discotilla lindbergi* Chopard

*Orchamus raulinii* (Lucas)

*Tropidopola longicornis* (Fieber) subsp. nov. (?)

*Oedipoda venusta* Fieber

*Chorthippus (Glyptobothrus) biroi* (Kuthy)

Little can be said about the relationship of these species and subspecies with other members of the genera concerned. The position of *Acrometopa cretensis* is somewhat isolated in the genus, as is discussed by Ramme (1927). The nearest relative of *Poecilimon cretensis* is *P. inflatus* Brunner von Wattenwyl, which occurs in southwestern Anatolia, opposite the southern Sporades. *Platycleis (Platycleis) grisea cretica* comes close to the nominate form and can be considered to be related to the Sicilian species *P. concii* Galvagni. The affinity between the numerous *Eupholidoptera* species is, with few exceptions, far from clear. *Orchamus raulinii* presumably is more closely allied to those species of the genus, which occur in some Aegean islands, Anatolia, Cyprus, Syria, the Lebanon and Israel. Our *Tropidopola* material from Crete comes close to the Egyptian species. *T. longi-*

*cornis* (Fieber), but as pointed out in this paper, a revision of the Mediterranean species is needed and the suggested resemblance with *longicornis* might be incorrect. The relationship with congeneric species in cases like *Oedipoda venusta*, *Chorthippus (Glyptobothrus) biroi* and the different diverse cave-Orthoptera is doubtful, except for *Dolichopoda paraskevi*. This species comes near *D. naxia* Boudou-Saltet, which occurs in Naxos, one of the Cyclades. This agrees with the close resemblance between the fauna of the Cyclades and that of Crete, which is also proved by the distributional ranges of *Acrometopa cretensis*, *Poecilimon cretensis* and *Eupholidoptera astyla*.

The number of *Eupholidoptera* species confined to Crete is remarkably large, which is very interesting from a zoogeographical point of view. There is a conspicuous difference between the rich fauna of Anatolia and the neighbouring Aegean islands, where the largest number of *Eupholidoptera* species occur, and the poor fauna of the Peloponnese and Kíthira more to the south, which have one species each. This could be an argument that the faunas of Crete and Anatolia would be more closely related than those of Crete and the Peloponnese. However, as to the number of congeneric species, the opposite holds true for *Poecilimon*. While in Crete this genus is represented by one species only (although very close to the Anatolian *P. inflatus*), in Anatolia and the Balkan Peninsula, including the Peloponnese, an overwhelming number of *Poecilimon* species occur.

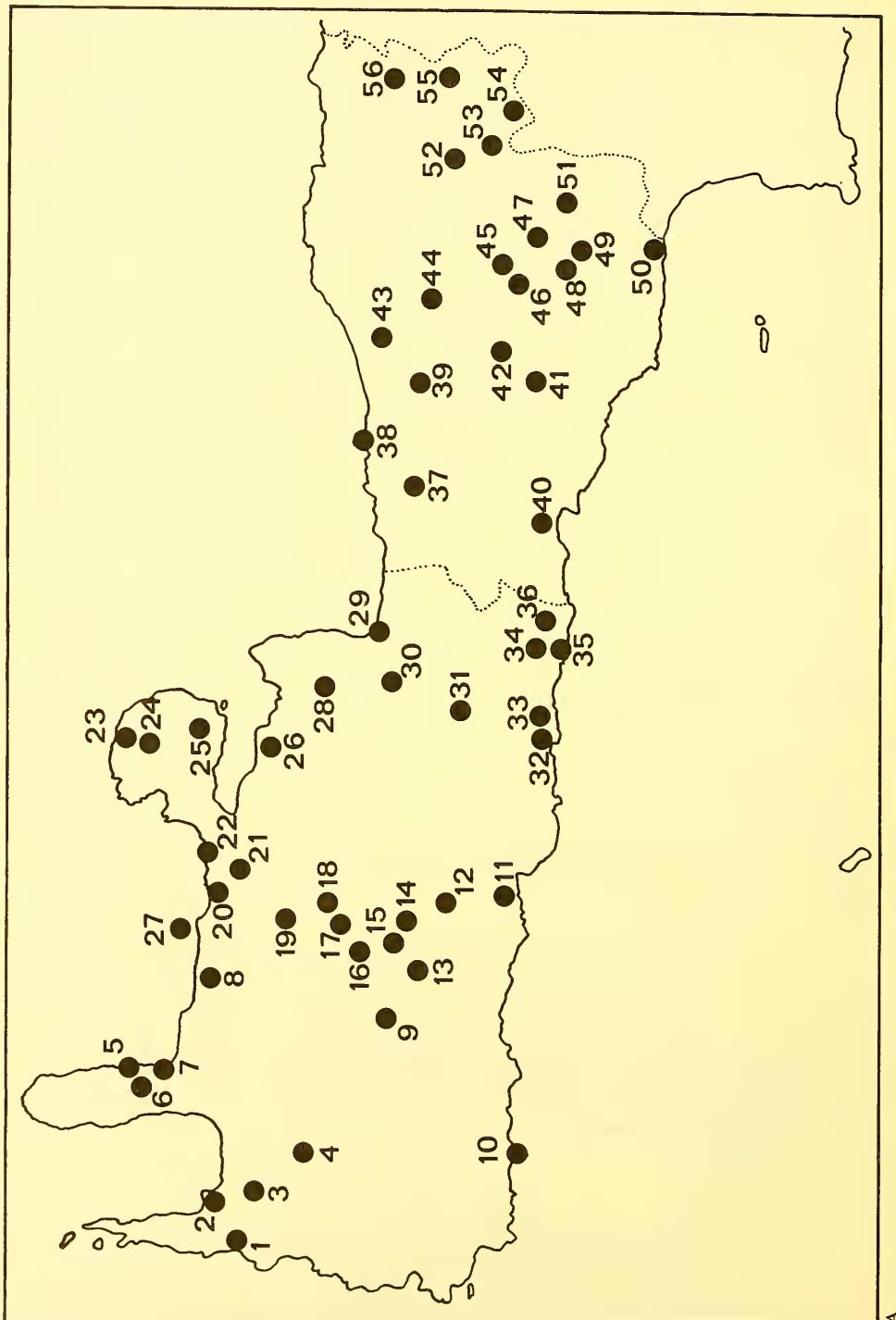
The non-endemic species of Crete are, with few exceptions, widely distributed species: they are found all over the Mediterranean Region, or in its western or eastern parts, or throughout southeastern Europe, including the Peloponnese, the Aegean islands and northwestern Anatolia. A particular case is formed by the only member of the Ephippigerinae in Crete, *Uromenus (Bolivarius) elegans* (Fischer), which occurs in Corsica, Sardegna, Italy, Sicily and Crete. Actually, Crete forms the southeasternmost part of the range of this subfamily, which has its centre of distribution in southwestern Europe and northwestern Africa. Neither in the Peloponnese, nor in the Aegean islands or Anatolia a member of this subfamily is known to occur. Unfortunately, the distribution in the Greek and Anatolian regions and often the taxonomy of the faunistically more important species are far from sufficiently known.

With so many gaps in our knowledge, it may be clear that only general conclusions can be drawn as to the relationship of the orthopterous fauna of Crete. The closest relationships are found with the fauna of the Cyclades and the southern Sporades. The affinity to the fauna of Anatolia appears to be greater than to that of the Greek mainland, especially of the Peloponnese. Besides there is a resemblance to the fauna of Sicily, although less clear than to that of the eastern part of the Mediterranean Region.

#### LIST OF LOCALITIES

(numbers refer to the map, Fig. 13)

The localities and data of the material studied in the present paper and that recorded previously, are listed below under regional headings: Nomós Chaníou



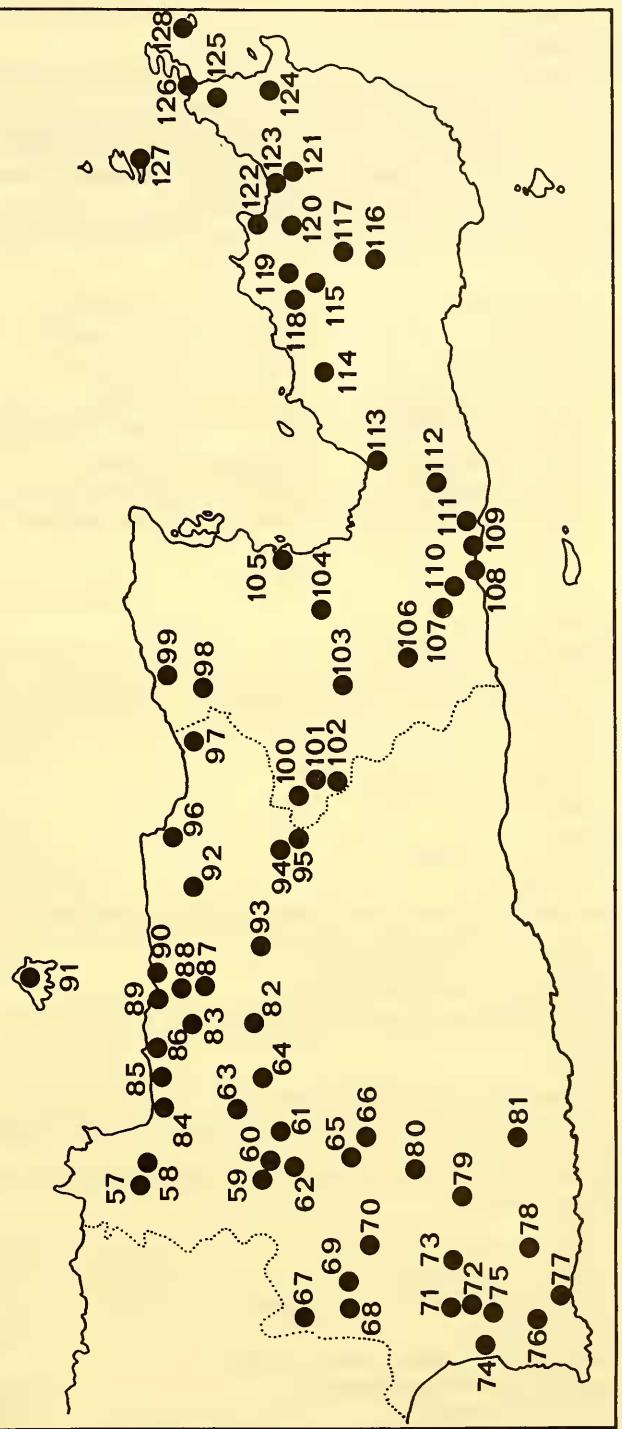


Fig. 13. Map of Crete, numbers refer to List of Localities. A, West Crete; B, East Crete. (Different scales.)

B

nr. 1-36; Nomós Réthimnis nr. 37-56; Nomós Irákliou nr. 57-97; Nomós Lassithíou nr. 98-128.

The Greek orthography may be transcribed in Roman characters in diverse ways. In our list we use the spelling as printed in the Tourist Map of Crete, copyright Chr. Z. Mathioulakis, Athens. This map is included in H. Guanella, Kreta, Ein Reiseführer, 3. Auflage 1972, Flamborg Verlag, Zürich. Other transcriptions used previously follow the ones used here.

The names of most of the collectors are abbreviated as follows:

(A)	K. Attems	(Li)	K. Lindberg
(B)	L. Biró	(Lu)	J. A. W. Lucas
(C)	G. Cecconi	(Luc)	P. H. Lucas
(B-S)	P. Boudou-Saltet	(S)	A. Schultz
(E)	A. C. & W. N. Ellis	(O)	S. J. van Ooststroom
(Ga)	W. H. Gravestein	(We)	F. Werner
(Ge)	O. Grebenchikoff	(Wi)	F. Willemse c.s.
(K)	M. C. & G. Kruseman	(Wo)	J. H. Woudstra

Nomós Chaníou:

1. Falásarna, 7.v.1973 (O & Ga).
2. Kísamos: plateau de Kissamos (Luc).
3. Meráda: Dorf Merades sw. von Kastelli Kisamu, 7.iii.1925 (S).
4. Spilia Aghia Sofia: cavité Aghia Sophia, Topolia (B-S).
5. Ellinóspilio,
  - a. Hellinospilo, 25.iv.1955 (Li);
  - b. cavité Hellinospilo (B-S).
6. Rodopóu:
  - a. Rhodopu, 8.x.1926 (S);
  - b. 1.v.1973 (O).
7. Moní Odigitrias: Kloster Gonia, Halbinsel Spatha, 8.x.1925 (S).
8. Geráni, 6.v.1973 (Ga).
9. Vasilianá, 700 m, 7.viii.1973 (Wi).
10. Paleochóra: environs de Sélino (Luc).
11. Aghia Rouméli: Hagia Rumeli, 10.v.1900 (A).
12. Samariá:
  - a. (Ge);
  - b. Sanmaria, 13.vi.1942, Kl. Zimmermann.
13. Linoséli, along mountain track between Xilóskalo and summit Gigilós (Léfska Óri), 1600-1800 m, 5.viii.1973 (Wi).
14. Koukoulé, surrounding of mountain hut "Kalérji" below summit Koukoulé (Léfska Óri), 1600-1800 m, 6.viii.1973 (Wi).
15. Omalós:
  - a. Homalos, 1050 m, 8.v.1900 (A);
  - b. 1050 m, 18.viii.1906 (B);
  - c. Homalos-Ebene, 1000 m, vi.1926 (We);
  - d. 4.v.1973 (Ga);
  - e. Omalós plateau, 1000 m, 4.viii.1973 (Wi);
  - f. grotte Omalos Katavothron (B-S);
  - g. 1000 m, 31.vii.1938 (Ge).
16. Láki-Omalós, between the villages, 750 m, 4.viii.1973 (Wi).

17. Láki:  
 a. Lacus (C);  
 b. Lakkos, in Schluchten, 520 m, vi.1926 (We);  
 c. 450 m, 3.viii.1973 (Wi);  
 d. Lakki, 500-1000 m, 30.vii.1939 (Ge).

18. Mesklá, Schlucht nach Theriso, 300-540 m, vi.1926 (We).

19. Fournés: Phurnes, Tal des trockenliegenden Platanos, 100 m, vi.1926 (We).

20. Makrís Tíchos, 5 km West of Chaniá, dunes, 0-5 m, 7.viii.1973 (Wi).

21. Perivolía, südwestlich von Kanea, v.1900 (A).

22. Chaniá:  
 a. Kanea, v.1900 (A);  
 b. Canea, 1906 (B);  
 c. Canea, 31.iii.1925 (S);  
 d. v.1968 (Wo).

23. Katholikó:  
 a. grotte de Catholivo ou d'Aguiou, 21.iv.1955 (Li) & cavité Catholivo ou Aghiou (B-S);  
 b. cavité Panagia (B-S);  
 c. Achyrosplio, 21.iv.1955 (Li) & cavité Achyrosplio (B-S);  
 d. Arkalo Spileo, Halbinsel Akrotiri, 200-300 m, v. (? vi) 1926 (We); (precise location unknown).

24. Moní Tzagaróliou: Kloster Aja Trias, Halbinsel Akrotiri, 26-28.ii.1925 (S).

25. Akrotíri:  
 a. (C);  
 b. Akrotiri-Ebene, 30-70 m, v.1926 (We).

26. Áptera:  
 a. Abdera, Eparchie Apokoronas, 9.x.1925 (S);  
 b. Ruinen und Gewölbe des Metellus Creticus, 200 m, v.1926 (We).

27. Nisos Agón Theodóron: ile D. Teodore (C).

28. Eparchía Apokorónou (approximately):  
 a. plateau d'Apokorona (Luc);  
 b. Apocorona (C);  
 c. Apokorona, 9.x.1925 (S).

29. Georgioúpolis: cavité (B-S).

30. Alíkampos: Ali Kampos, v.1900 (A).

31. Askifou, 750 m, 2.viii.1973 (Wi).

32. Chóra Sfakion: pentes de Sphakia (Luc).

33. Komitádes, 18.iii.1925 (S).

34. Kapsodásos, 19.iii.1925 (S).

35. Frángo Kástello:  
 a. Frankokastelli, 25.v.1938, R. E. Gathorne-Hardy;  
 b. 5.v.1973 (Ga);  
 c. idem (O);  
 d. beach and dunes, 0-4 m, 3.viii.1973 (Wi).

36. Skalotí, 19.iii.1925 (S).

## Nomós Réthminis:

37. Goniá:  
 a. environs de Gonia (Luc);  
 b. 23.iii.1904, D. M. A. Bate (location correct ?);  
 c. Megali Episkopi bis Gonia, 12.x.1925 (S).

38. Réthimnon:  
 a. Rethymno, 21.v.1900 (A);  
 b. 13.x.1925 (S).

39. Prasiés: Prasses, 23.x.1925 (S).

40. Sélia, 450 m, 2.viii.1973 (Wi).

41. Spíli, 600 m, 2.viii.1973 (Wi).

42. Patsós:
  - a. Patssos, 22.x.1925 (S);
  - b. Potami, nw. von Patssos, 22.x.1925 (S).
43. Loutrá: Lutra, 14.x.1925 (S).
44. Moní Arkádiou:
  - a. Kloster Arkadi, 16.x.1925 (S);
  - b. 8.v.1973 (O).
45. Moní Asomaton: Kloster Assomatos, 17.x.1925 (S).
46. Amári, 1906 (B).
47. Vizári:
  - a. Visari (C);
  - b. Visari, 24.v.1900 (A).
48. Áno Méros, 500-700 m, 1.viii.1973 (Wi).
49. Chordákion, 450 m, 1.viii.1973 (Wi).
50. Aghía Galíni:
  - a. 0-40 m, x.1972 (E);
  - b. 0-40 m, 31.vii.1973 (Wi).
51. Kouróútes: Kurutes, am Fuss des Psiloriti, 18.x.1925 (S).
52. Ídi Óros (approximately):
  - a. pentes d'Ida (Luc);
  - b. Mons Ida, 2200 m, 1906 (B).
53. Kolítá-Psilorítis, between hamlet Kolítá and summit Psilorítis (Ídi Óros), 1700-2100 m, 28-29.vii.1973 (Wi).
54. Níðha plateau:
  - a. Antrum Jovis, 1200-1500 m, 1906 (B);
  - b. Nidka-Hochebene und Andiskari, 11.v.1925 (S);
  - c. near the Idéon Ántron, 1370 m, 11.vi.1972 (K).
55. Anógia, 800 m, 10-15.vi.1972 (K).
56. Drosiá, 250 m, 23.x.1972 (E).

Nomós Irákliou:

57. Márathos, 450 m, 26.x.1972 (E).
58. Spílios Camilarí:
  - a. 5.iv.1955 (Li);
  - b. grotte annexe de Camilari, 2.iv.1955 (Li).
59. Krousónas: Krussona, 9.v.1925 (S).
60. Sárchos: grotte de Sarkhos, 10.iv.1955 (Li).
61. Síva, 300 m, 27.iii.1973 (Wi).
62. Asítēs: Assitaes, M. Holtz.
63. Stavrákia, 300 m, 27.vii.1973 (Wi).
64. Tsagaráki, 15.x.1972 (E).
65. Aghia Varvára, 600-750 m, 21.x.1972 (E).
66. Megáli Vrísí: Megali Wryssi, 23.v.1925 (S).
67. Kamáres-Kolítá, along mountain track between village Kamáres and hamlet Kolítá (Ídi Óros), 520-1650 m, 28-29.vii.1973 (Wi).
68. Kamáres, 520 m, 28-29.vii.1973 (Wi).
69. Vorízia, 450 m, 27.vii.1973 (Wi).
70. Zarós: Saro, 15.v.1925 (S).
71. Phaistós:
  - a. near the excavations, 100 m, 23-26.v & 18.vi.1972 (K);
  - b. 1-2 km South of the ruins, wet meadows in the plain, 40 m, 24.v.1972 (K);
  - c. idem, 16 & 18.x.1972 (E);
  - d. idem, 30.vii.1973 (Wi).
72. Ághios Ioánis: Ajos Joannis, 16.v.1925 (S).
73. Míres: Myrás, 16.v.1925 (S).

74. Pitsídia, dunes, 0-60 m, 30.vii.1973 (Wi).  
 75. Síva: Siwa, Ep. Pyrgiotissa, 7.v.1925 (S).  
 76. Moní Odigitriás: Kloster Hodigitria, Ep. Kánurion, 18.v.1925 (S).  
 77. Lásea, 18.v.1925 (S).  
 78. Moní Apezanón: Kloster Apeganás, Ep. Kánurion, 20.v.1925 (S) (correct ?).  
 79. Mesarás: plaine de Messara (Luc) (approximately).  
 80. Vourvoulítis: Wurwulitis, 22.v.1925 (S).  
 81. Loúkia, 29.iv.1973 (Ga).  
 82. Archánes, 600-750 m, 19.x.1972 (E).  
 83. Knossós:  
   a. 29.v.1900 (A);  
   b. wayside, 17 & 21.v.1972 (K);  
   c. along brooklet, South of the ruins, 100 m, 10.viii.1973 (Wi).  
 84. Gázion, 7 km West of Iráklion, x.1972 (E).  
 85. Thérisos, also Lindo Beach or Lido, 3 km West of Iráklion, 0.3 m:  
   a. 19.v.1972 (K);  
   b. 14.x.1972 (E);  
   c. 25.ix.1973 (K).  
 86. Iráklion:  
   a. environs de Candie (Luc);  
   b. Kandia, 1900 (A);  
   c. Herakleion, 1906 (B);  
   d. 1-24.vi.1925 (S);  
   e. (Ge);  
   f. 5-12.iv.1975 (Lu).  
 87. Kornaróú, 6 km East of Iráklion, 10-15 m, 27.ix.1973 (K).  
 88. Neraídispilo ou grotte Ilíthias, 4.iv.1955 (Li).  
 89. Florida Beach, 6 km East of Iráklion, 0-3 m, 26.ix.1973 (K).  
 90. Amnissós:  
   a. beach, 0-5 m, 20.v. & 16.vi.1972 (K);  
   b. 27.x.1972 (E);  
   c. 5-50 m, 29.ix.1973 (K).  
 91. Nísoi Día: Insula Dhia, 1906 (B).  
 92. Skotinón:  
   a. Hagia Paraskevi à Scotino, 5.v.1955 (Li);  
   b. grotte Aghia Paraskevi, près du village de Skotino, ix.1971 (B-S).  
 93. Moní Agaráthou: Kloster Anagarathos, 27-28.v.1925 (S).  
 94. Xidás: Xyda, 27.vi.1925 (S).  
 95. Kastamonítsa, 27.vi.1925 (S).  
 96. Chersónisos: Chersonissos, 24.vii.1925 (S).  
 97. Mália:  
   a. inland of the ruins, 10-15 m, 18.v. & 9.vi.1972 (K);  
   b. 22-23. & 29.x.1972 (E);  
   c. along highway, 10 m, 9.viii.1973 (Wi);  
   d. beach, 0-5 m, 28.ix.1973 (K).

Nomós Lassithíou:

98. Vrachásion:  
   a. grotte Peristera, 11.v.1955 (Li);  
   b. idem (B-S).  
 99. Milatos:  
   a. grotte de Milatos, 12.v.1955 (Li);  
   b. idem (B-S);  
   c. grotte de Saint-Constantin, 12.v.1955 (Li).  
 100. Kato Metóchi, 28.vi.1925 (S).

101. Psichrón:
  - a. Psychro, 29.vi.1925 (S);
  - b. 850 m, 19.vi.1972 (K);
  - c. Psychro, 900 m, 7.viii.1939 (Ge).
102. Diktéon Ántron:
  - a. Dictéon antron, 7.v.1955 (Li);
  - b. grotte Diktaion Andron, ix.1971 (B-S).
103. Katharó plateau: Hochtal Catharo, 30.vi.1925 (S).
104. Kritsá, 330 m, 29.v.1972 (K).
105. Ághios Nikólaos:
  - a. St. Nikolo, v.1904 W.M.;
  - b. 0-5 m, 28-31.v.1972 (K);
  - c. 3 km North and South of the town, 0-50 m, 9.viii.1973 (Wi);
  - d. 31.iii.1975 (Lu).
106. Máles: Malás, 1.vii.1925 (S).
107. Anatolí:
  - a. Anadoli, 1.vii.1925 (S);
  - b. 400 m, 9.viii.1973 (Wi).
108. Graligá, 0-5 m, 3.vi.1972 (K).
109. Xerókampos, 0-5 m, 2.vi.1972 (K).
110. Kalógeri: Kalogeros, 2.vii.1925 (S).
111. Ierápetra:
  - a. Jerapetra;
  - b. idem, 30.vi.1925 (S);
  - c. 0-5 m, 1.vi.1972 (K).
112. Káto Chorió: Kato Chorion, 3.vii.1925 (S).
113. Pachiámos, 4.vii.1925 (S).
114. Sfáka: Sphaka, 5.vii.1925 (S).
115. Tourtouli: Megali Katofyngui, 9.v.1955 (Li).
116. Síkiá, 400 m, 5.x.1973 (K).
117. Ághios Geórgios — Epáno Episkopí, 300 m, 5.x.1973 (K).
118. Chamézion: Chamesi, 6.vii.1925 (S).
119. Skopí, 100 m, 7.vi.1972 (K).
120. Pískokéfalon:
  - a. Piskephalon, 7.vii.1925 (S);
  - b. 5 m, 7.x.1973 (K).
121. Pouá Eklisiá: Russaklisia, 15.vii.1925 (S).
122. Sitia:
  - a. plateau de Sitia (Luc);
  - b. beach near the town, 0-3 m, 5.vi.1972 (K);
  - c. above the cemetery, 30 m, 6.vi.1972 (K);
  - d. hills West of the town, 50 m, 2.x.1973 (K);
  - e. wet meadows East of the Town, 2-3 m, 4.x.1973 (K);
  - f. v. Oertzen;
  - g. 2-16.v.1942, Wettstein.
123. Sitia, 5 km East of the town, beach, 0-5 m, 3.x.1973 (K).
124. Palékastron, 100 m, 3.x.1973 (K).
125. Vái:
  - a. mouth of the brook with *Juncus maritimus*, below zone of *Phoenix theophrasti*, 0 m, 3.x.1973 (K);
  - b. above the zone of *Phoenix*, 5 m, 3.x.1973 (K).
126. Ácra Síderos: Kap Sidero, 14.vii.1925 (S) (approximately).
127. Nísov Gianisáda: Insel Janisada.
128. Nísov Elása: Insel Elasa, 1887, v. Oertzen.

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